

# YMC APPLICATION DATA ⑤

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**12 その他**

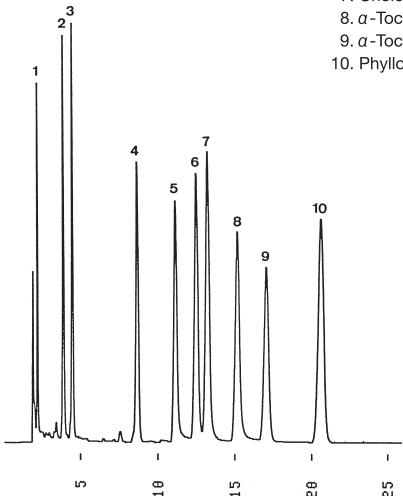
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## 脂溶性ビタミン Oil-soluble vitamins

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4. Menaquinone (Vitamin K<sub>2</sub>)
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6. Ergocalciferol (Vitamin D<sub>2</sub>)
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10. Phylloquinone (Vitamin K<sub>1</sub>)



(G910415B)

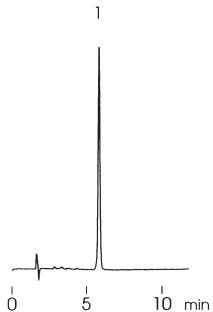
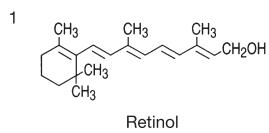
Column : YMC-Pack ODS-A (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : acetonitrile  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.08 AUFS  
Injection : 15 μL (0.01 ~ 0.21 mg/mL)



(G910523T)

Column : YMC-Pack SIL (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : cyclohexane/dichloromethane/acetic acid (100/0.5/0.5)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 350 nm, 0.32 AUFS  
Injection : 5 μL (1.0 mg/mL)

## レチノール Retinol

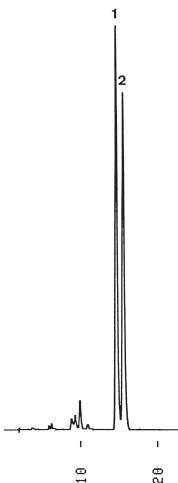


(A970708A)

Column : YMC-Pack Pro C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : methanol/water (92/8)  
Flow rate : 1.0 mL/min  
Temperature : 35 °C  
Detection : UV at 325 nm, 0.02 AUFS  
Injection : 20 μL (0.5 μg/mL)

## カロテン Carotene

1. α-Carotene
2. β-Carotene

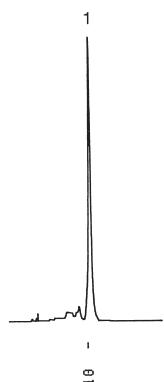


(G910523Q)

Column : YMC-Pack ODS-A (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : acetonitrile/methanol/THF (50/45/5)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : VIS at 450 nm, 0.16 AUFS  
Injection : 5 μL (0.05 mg/mL)

$\beta$ -カロテン  
 $\beta$ -Carotene

1.  $\beta$ -Carotene

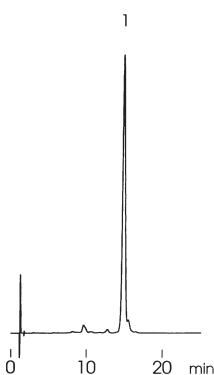
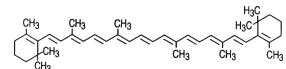


(M910529A)

Column : YMC-Pack CN (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/THF (35/35/30)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : VIS at 450 nm, 0.32 AUFS  
Injection : 7  $\mu$ L (0.125 mg/mL)

$\beta$ -カロテン  
 $\beta$ -Carotene

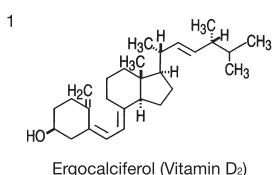
1.  $\beta$ -Carotene



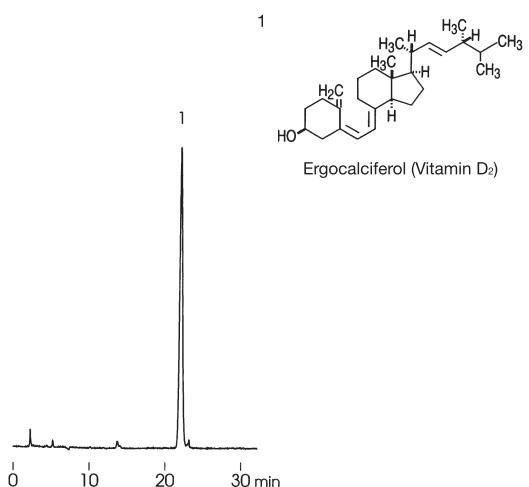
(A970716K)

Column : YMC-Pack ODS-AL (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/chloroform (96/4)  
Flow rate : 1.5 mL/min  
Temperature : 35 °C  
Detection : VIS at 455 nm, 0.04 AUFS  
Injection : 20  $\mu$ L (4.0  $\mu$ g/mL)

ビタミン D  
Vitamin D



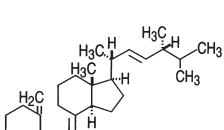
Ergocalciferol (Vitamin D<sub>2</sub>)



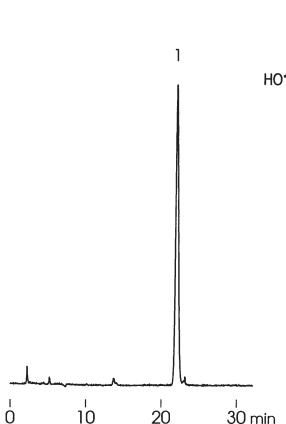
(C970808E)

Column : YMC-Pack SIL (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : hexane/2-propanol (99.6/0.4)  
Flow rate : 1.6 mL/min  
Temperature : ambient (28 °C)  
Detection : UV at 265 nm, 0.01 AUFS  
Injection : 100  $\mu$ L (1.0  $\mu$ g/mL)

ビタミン D  
Vitamin D



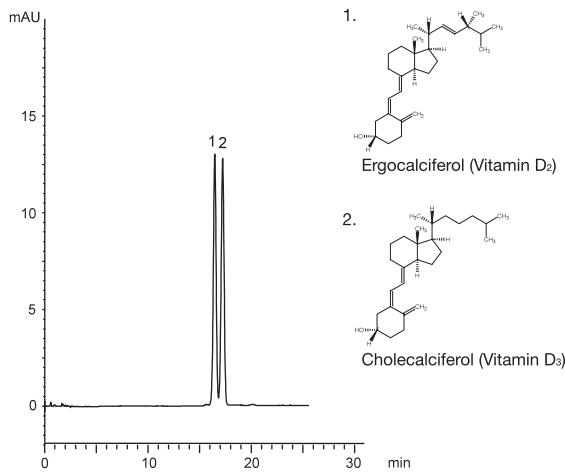
Cholecalciferol (Vitamin D<sub>3</sub>)



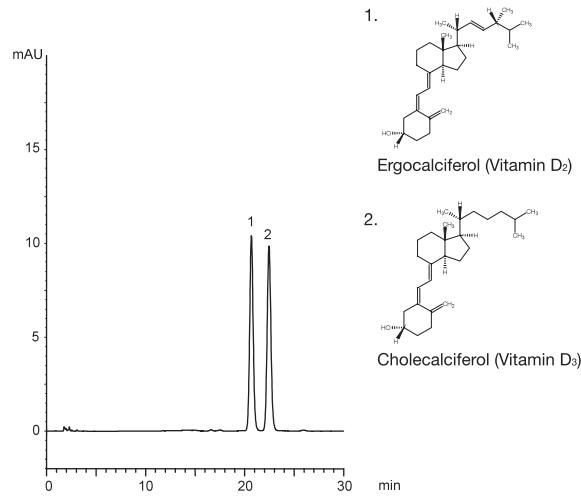
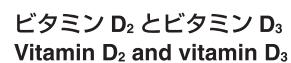
(C970808H)

Column : YMC-Pack SIL (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : hexane/2-propanol (99.6/0.4)  
Flow rate : 1.6 mL/min  
Temperature : ambient (28 °C)  
Detection : UV at 265 nm, 0.01 AUFS  
Injection : 100  $\mu$ L (1.0  $\mu$ g/mL)

## ビタミン D<sub>2</sub> とビタミン D<sub>3</sub> Vitamin D<sub>2</sub> and vitamin D<sub>3</sub>



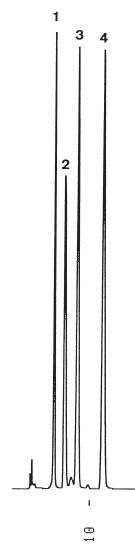
Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/water (95/5)  
 Flow rate : 1.0 mL/min  
 Temperature : 40 °C  
 Detection : UV at 265 nm  
 Injection : 10  $\mu$ L (0.01 mg/mL)



Column : YMC-Pack ODS-AL (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/water (95/5)  
 Flow rate : 1.0 mL/min  
 Temperature : 40 °C  
 Detection : UV at 265 nm  
 Injection : 10  $\mu$ L (0.01 mg/mL)

## トコフェロール Tocopherols

1.  $\alpha$ -Tocopherol
2.  $\beta$ -Tocopherol
3.  $\gamma$ -Tocopherol
4.  $\delta$ -Tocopherol



Column : YMC-Pack SIL (5  $\mu$ m, 12 nm)  
           150  $\times$  4.6 mm I.D.  
   Eluent : hexane/THF/acetic acid (97/3/0.25)  
   Flow rate : 1.0 mL/min  
   Temperature : 30  $^{\circ}$ C  
   Detection : UV at 295 nm, 0.08 AUFS  
   Injection : 10  $\mu$ L (0.20  $\sim$  0.31 mg/mL)

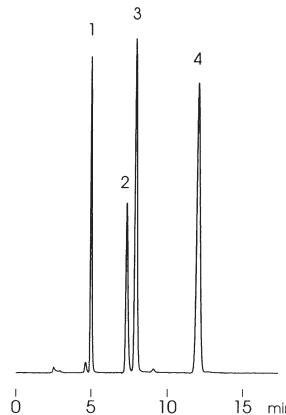


1   **$\alpha$ -Tocopherol**

2   **$\beta$ -Tocopherol**

3   **$\gamma$ -Tocopherol**

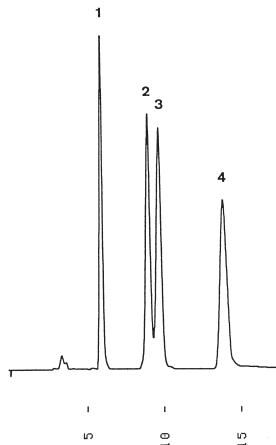
4   **$\delta$ -Tocopherol**



Column : YMC-Pack SIL (5 µm, 12 nm)  
 250 × 4.6 mm I.D.  
 Eluent : hexane/2-propanol/acetic acid (1000/6/  
 Flow rate : 1.4 mL/min  
 Temperature : 35 °C  
 Detection : FLS at Ex 298 nm, Em 325 nm  
 Injection : 20 µL (5 ~ 20 µg/mL)

トコフェロール  
Tocopherols

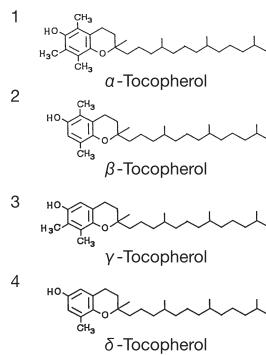
1.  $\alpha$ -Tocopherol
2.  $\beta$ -Tocopherol
3.  $\gamma$ -Tocopherol
4.  $\delta$ -Tocopherol



(T910501A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : n-hexane/tetrahydrofuran/acetic acid/water (93/7/0.4/0.01)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 295 nm, 0.08 AUFS  
Injection : 7  $\mu$ L (0.25 mg/mL)

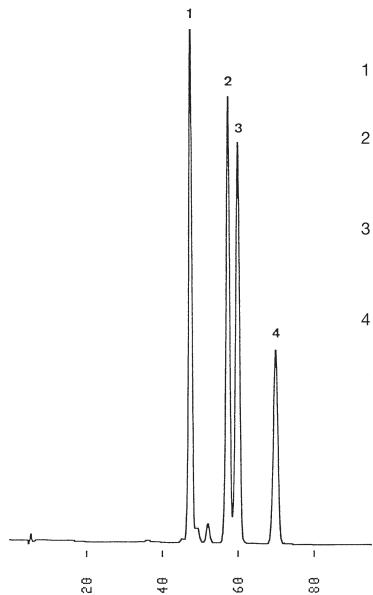
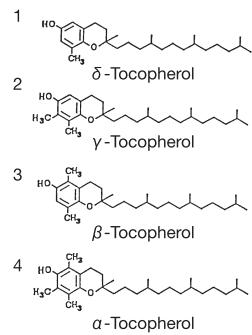
トコフェロール  
Tocopherols



(T920728E)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : hexane/ethyl acetate (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 295 nm, 0.08 AUFS  
Injection : 7  $\mu$ L (0.25 mg/mL)

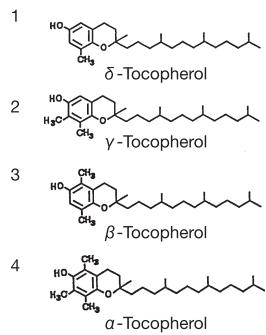
トコフェロール  
Tocopherols



(S930726A)

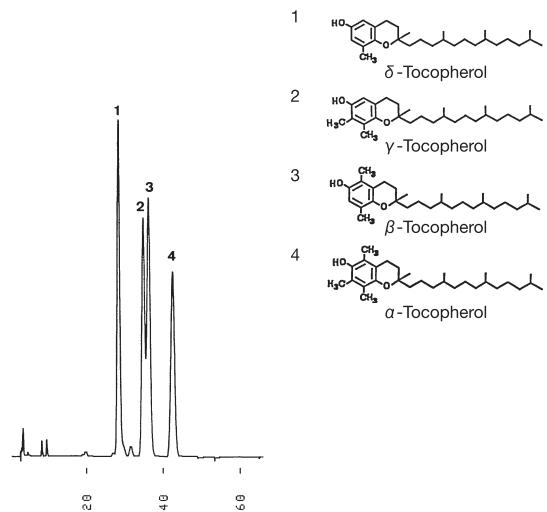
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
250 × 4.6 mm I.D.  
Eluent : 2-propanol/water (68/32)  
Flow rate : 0.5 mL/min  
Temperature : 30 °C  
Detection : UV at 295 nm, 0.032 AUFS  
Injection : 7  $\mu$ L (0.25 mg/mL)

トコフェロール  
Tocopherols



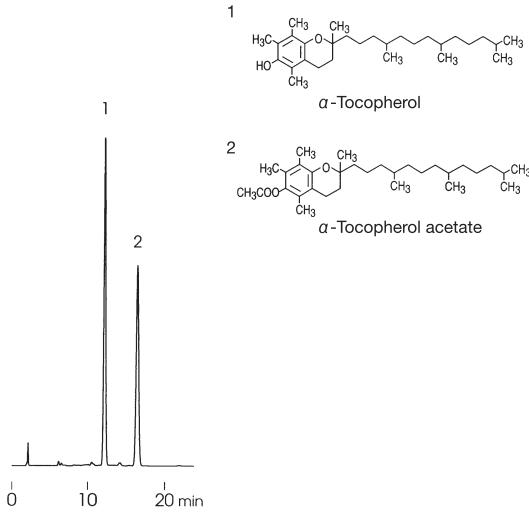
(S921217A)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : 2-propanol/water (75/25)  
Flow rate : 0.3 mL/min  
Temperature : 30 °C  
Detection : UV at 295 nm, 0.08 AUFS  
Injection : 7  $\mu$ L (0.25 mg/mL)  
Ref.) Y. Satomura, M. Kimura and Y. Itokawa, J. Chromatogr., 625, 372-376 (1992)

トコフェロール  
Tocopherols

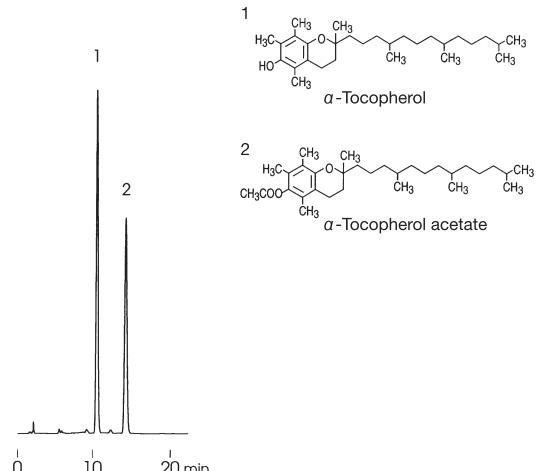
(S921216C)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 2-propanol/water (65/35)  
Flow rate : 0.7 mL/min  
Temperature : 30 °C  
Detection : UV at 295 nm, 0.04 AUFS  
Injection : 7  $\mu$ L (0.25 mg/mL)  
Ref.) Y. Satomura, M. Kimura and Y. Itokawa, J. Chromatogr., 625, 372-376 (1992)

トコフェロールおよび酢酸トコフェロール  
Tocopherol and tocopherol acetate

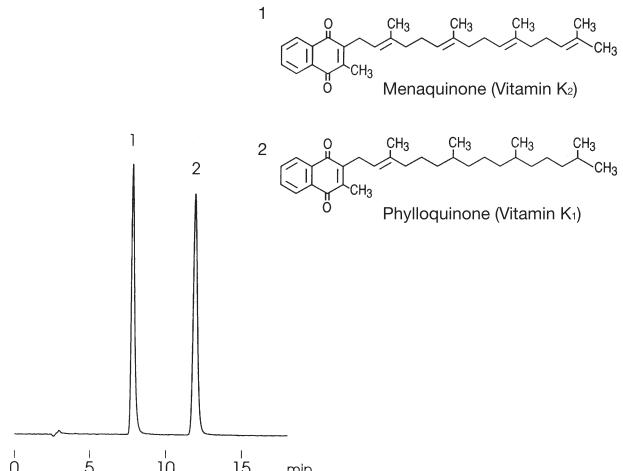
(S970426E)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (98/2)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 284 nm, 0.51 AUFS  
Injection : 20  $\mu$ L (1 mg/mL)  
(日本薬局方第13改正記載条件)

トコフェロールおよび酢酸トコフェロール  
Tocopherol and tocopherol acetate

(S970426C)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (98/2)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 284 nm, 0.51 AUFS  
Injection : 20  $\mu$ L (1 mg/mL)  
(日本薬局方第13改正記載条件)

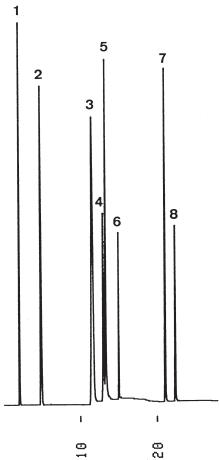
ビタミン K  
Vitamin K

(A970728B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/ethanol (5/1)  
Flow rate : 0.8 mL/min  
Temperature : 40 °C  
Detection : FLS at Ex 320 nm, Em 430 nm  
reduction column (platinum black, 10  $\times$  4.0 mm I.D.)  
Injection : 20  $\mu$ L (100 ng/mL)

水溶性ビタミン  
Water-soluble vitamins

1. L-Ascorbic acid (Vitamin C)
2. Nicotinic acid
3. Pyridoxine HCl (Vitamin B<sub>6</sub>)
4. Nicotinamide
5. Thiamine HCl (Vitamin B<sub>1</sub>)
6. Folic acid
7. Cyanocobalamin (Vitamin B<sub>12</sub>)
8. Riboflavin (Vitamin B<sub>2</sub>)

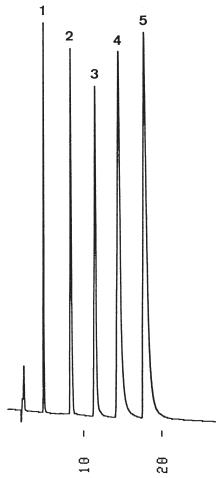


(G910415A)

Column	: YMC-Pack ODS-A (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.6) B) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.6)/acetonitrile (80/20) 0% B (0-5 min), 0-100% B (5-20 min, linear), 100% B (20-25 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm, 0.32 AUFS
Injection	: 10 μL (0.04 ~ 0.31 mg/mL)

水溶性ビタミン  
Water-soluble vitamins

1. Nicotinic acid
2. Pantothenic acid (Na salt)
3. Pyridoxine HCl (Vitamin B<sub>6</sub>)
4. Nicotinamide
5. Thiamine HCl (Vitamin B<sub>1</sub>)

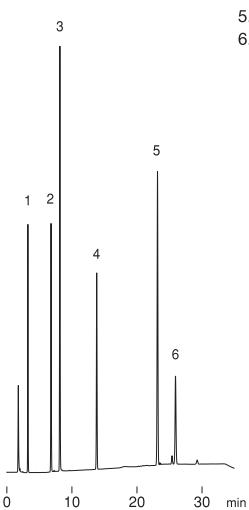


(G910523O)

Column	: YMC-Pack ODS-AM (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: 20 mM NaH <sub>2</sub> PO <sub>4</sub> -Na <sub>2</sub> HPO <sub>4</sub> (pH 6.5)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 210 nm, 0.08 AUFS
Injection	: 5 μL (0.02 ~ 0.58 mg/mL)

水溶性ビタミン  
Water-soluble vitamins

1. L-Ascorbic acid (Vitamin C)
2. Pyridoxine HCl (Vitamin B<sub>6</sub>)
3. Nicotinamide
4. Panthenol
5. Caffeine
6. Flavin mononucleotide sodium salt (Vitamin B<sub>2</sub>)

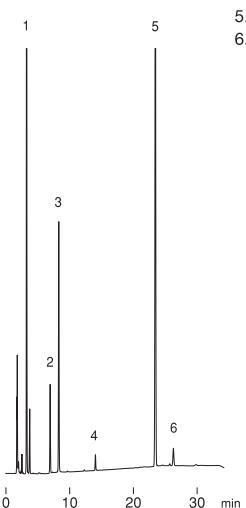


(F001004B)

Column	: Hydrosphere C18 (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: A) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5) B) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5)/acetonitrile (80/20) 0-60% B (0-20 min), 60% B (20-30 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 210 nm, 0.32 AUFS
Injection	: 5 μL (0.05 ~ 0.40 mg/mL)

市販 ドリンク剤中の水溶性ビタミン  
A drink including vitamins

1. L-Ascorbic acid (Vitamin C)
2. Pyridoxine HCl (Vitamin B<sub>6</sub>)
3. Nicotinamide
4. Panthenol
5. Caffeine
6. Flavin mononucleotide sodium salt (Vitamin B<sub>2</sub>)

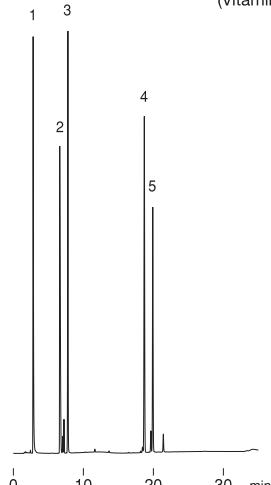


(F001004A)

Column	: Hydrosphere C18 (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: A) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5) B) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5)/acetonitrile (80/20) 0-60% B (0-20 min), 60% B (20-30 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 210 nm, 0.32 AUFS
Injection	: 5 μL
Sample	: 5 times dilution with 5% metaphosphoric acid

水溶性ビタミン  
Water-soluble vitamins

1. Thiamine HCl (Vitamin B<sub>1</sub>)
2. Pyridoxine HCl (Vitamin B<sub>6</sub>)
3. Nicotinamide
4. Caffeine
5. Flavin mononucleotide sodium salt (Vitamin B<sub>2</sub>)

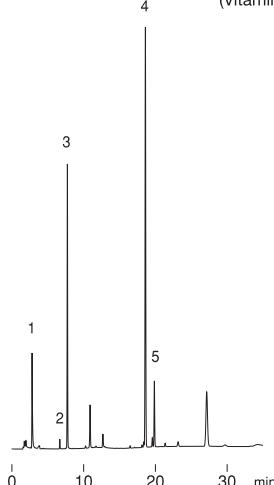


(F001011A)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5) B) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5)/acetonitrile (80/20) 0-90% B (0-20 min), 90% B (20-30 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm, 0.32 AUFS
Injection	: 15 $\mu$ L (0.04 ~ 0.60 mg/mL)

市販ドリンク剤中の水溶性ビタミン  
A drink including vitamins

1. Thiamine HCl (Vitamin B<sub>1</sub>)
2. Pyridoxine HCl (Vitamin B<sub>6</sub>)
3. Nicotinamide
4. Caffeine
5. Flavin mononucleotide sodium salt (Vitamin B<sub>2</sub>)

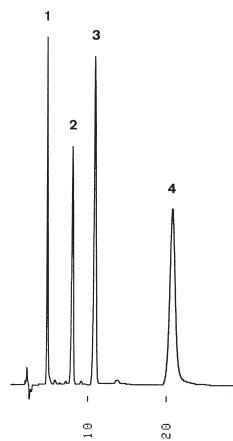


(F001011B)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5) B) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.5)/acetonitrile (80/20) 0-90% B (0-20 min), 90% B (20-30 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm, 0.32 AUFS
Injection	: 15 $\mu$ L
Sample	: 5 times dilution with water

水溶性ビタミン  
Water-soluble vitamins

1. *p*-Aminobenzoic acid (PABA)
2. Biotin (Vitamin H)
3. Riboflavin (Vitamin B<sub>2</sub>)
4. Cyanocobalamin (Vitamin B<sub>12</sub>)

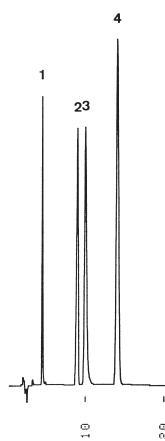


(M920212B)

Column	: YMC-Pack Ph (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: acetonitrile/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (10/90)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 210 nm, 0.16 AUFS
Injection	: 10 $\mu$ L (0.02 ~ 0.30 mg/mL)

水溶性ビタミン  
Water-soluble vitamins

1. *p*-Aminobenzoic acid (PABA)
2. Biotin (Vitamin H)
3. Cyanocobalamin (Vitamin B<sub>12</sub>)
4. Riboflavin (Vitamin B<sub>2</sub>)

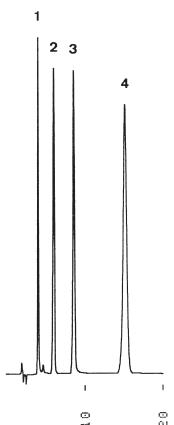


(M920212A)

Column	: YMC-Pack ODS-AM (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: acetonitrile/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (10/90)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 210 nm, 0.16 AUFS
Injection	: 10 $\mu$ L (0.02 ~ 0.30 mg/mL)

水溶性ビタミン  
Water-soluble vitamins

1. *p*-Aminobenzoic acid (PABA)
2. Biotin (Vitamin H)
3. Riboflavin (Vitamin B<sub>2</sub>)
4. Cyanocobalamin (Vitamin B<sub>12</sub>)

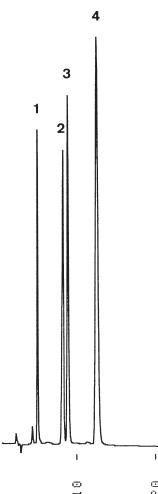


(M920212C)

Column : YMC-Pack TMS (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.02 ~ 0.30 mg/mL)

水溶性ビタミン  
Water-soluble vitamins

1. *p*-Aminobenzoic acid (PABA)
2. Biotin (Vitamin H)
3. Riboflavin (Vitamin B<sub>2</sub>)
4. Cyanocobalamin (Vitamin B<sub>12</sub>)

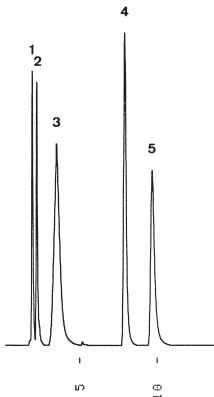


(M920212D)

Column : YMC-Pack C<sub>4</sub> (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.02 ~ 0.30 mg/mL)

水溶性ビタミン  
Water-soluble vitamins

1. L-Ascorbic acid (Vitamin C)
2. Orotic acid (Vitamin B<sub>13</sub>)
3. Pyrroloquinoline quinone (PQQ)
4. Pyridoxine HCl (Vitamin B<sub>6</sub>)
5. Nicotinamide

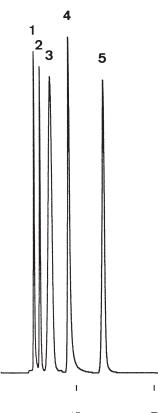


(M920207B)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 100 mM CH<sub>3</sub>COOH/100 mM CH<sub>3</sub>COONH<sub>4</sub> (30/70, pH 5.1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.04 ~ 0.20 mg/mL)

水溶性ビタミン  
Water-soluble vitamins

1. L-Ascorbic acid (Vitamin C)
2. Orotic acid (Vitamin B<sub>13</sub>)
3. Pyrroloquinoline quinone (PQQ)
4. Pyridoxine HCl (Vitamin B<sub>6</sub>)
5. Nicotinamide

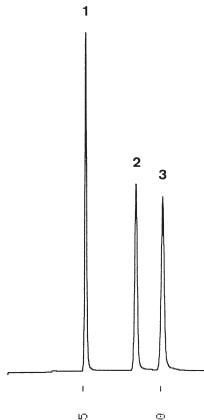


(M920207A)

Column : YMC-Pack TMS (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 100 mM CH<sub>3</sub>COOH/100 mM CH<sub>3</sub>COONH<sub>4</sub> (30/70, pH 5.1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.04 ~ 0.20 mg/mL)

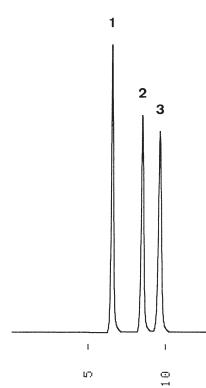
## 水溶性ビタミン Water-soluble vitamins

1. Nicotinic acid
2. Erythorbic acid
3. L-Ascorbic acid



(T920525A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 250 nm, 0.16 AUFS  
Injection : 10 μL (0.05 ~ 0.1 mg/mL)

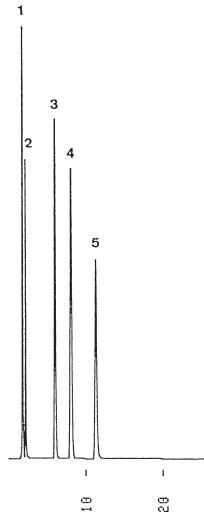


(T920525B)

Column : YMC-Pack NH<sub>2</sub> (5 μm, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 250 nm, 0.16 AUFS  
Injection : 10 μL (0.05 ~ 0.1 mg/mL)

## 水溶性ビタミン Water-soluble vitamins

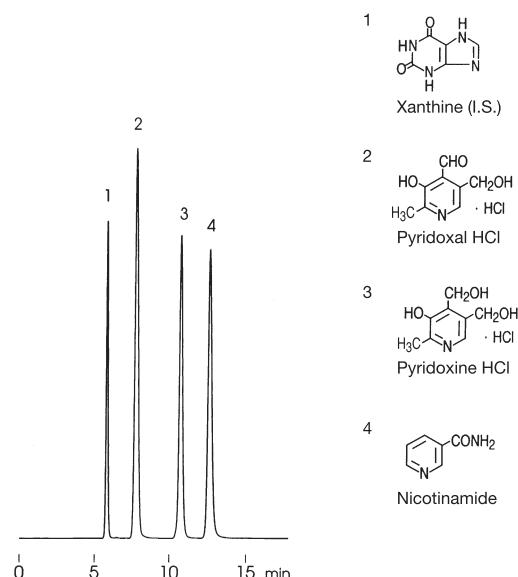
1. Pyridoxine HCl
2. Nicotinamide
3. Benfotiamine
4. Cyanocobalamin
5. Riboflavin



(S930712E)

Column : J'sphere ODS-H80 (4 μm, 8 nm)  
150 × 4.6 mm I.D.  
Eluent : acetonitrile/50 mM (NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (10/90)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm, 0.13 AUFS  
Injection : 5 μL (0.04 ~ 0.48 mg/mL)

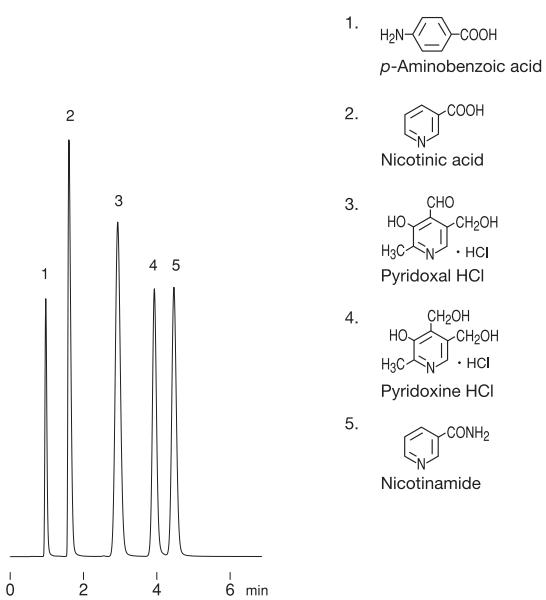
## 水溶性ビタミン Water-soluble vitamins



(S960912B)

Column : YMC-Pack Pro C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.13 AUFS  
Injection : 5 μL (0.05 ~ 0.2 mg/mL)

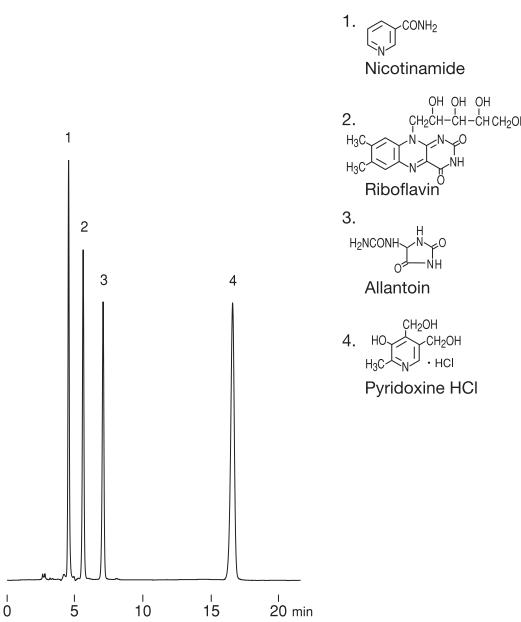
水溶性ビタミン  
Water-soluble vitamins



(S010125A)

Column : HydroSphere C18 (3  $\mu$ m, 12 nm)  
50  $\times$  2.0 mm I.D.  
Eluent : 10 mM CH<sub>3</sub>COONH<sub>4</sub>  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.128 AUFS  
Injection : 2  $\mu$ L (0.01 ~ 0.1 mg/mL)

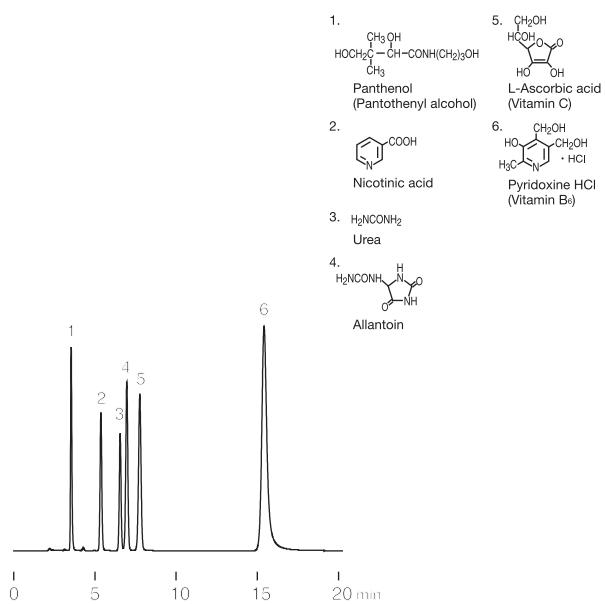
アラントインおよび水溶性ビタミン  
Allantoin and water-soluble vitamins



(S971121D)

Column : YMC-Pack NH<sub>2</sub> (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.5)/acetonitrile (20/80)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.064 AUFS  
Injection : 8  $\mu$ L (0.01 ~ 0.04 mg/mL)

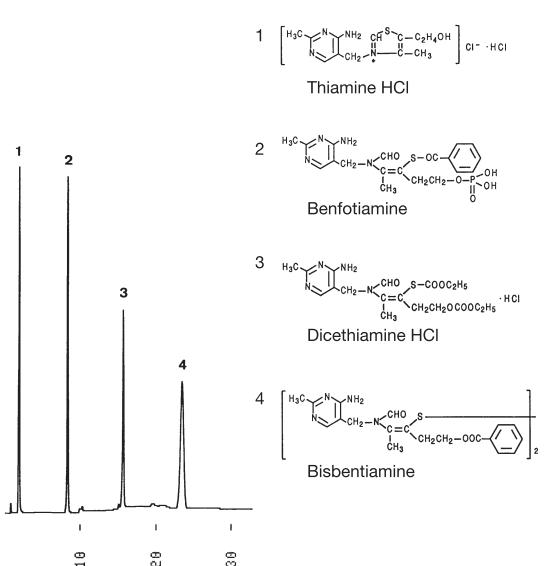
尿素、アラントインおよび水溶性ビタミン  
Urea, allantoin and water-soluble vitamins



(J030624B)

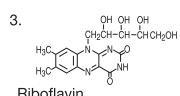
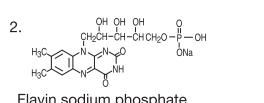
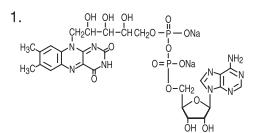
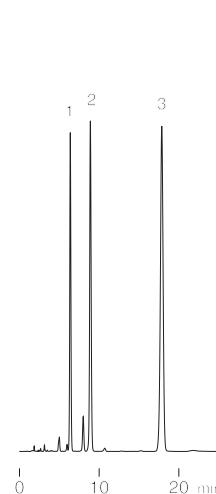
Column : YMC-Pack Polyamine II  
250  $\times$  4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.8)/acetonitrile (20/80)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.01 ~ 5.0 mg/mL)

ビタミン B<sub>1</sub> 誘導体  
Thiamine and its modified compounds



(S940202D)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : A) 50 mM (NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub>  
B) methanol/50 mM (NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (60/40)  
10-100% B (0-15 min, linear), 100% B (15-30 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.26 AUFS  
Injection : 10  $\mu$ L (0.1 ~ 0.2 mg/mL)

リボフラビンおよび関連化合物  
Riboflavin and related compounds

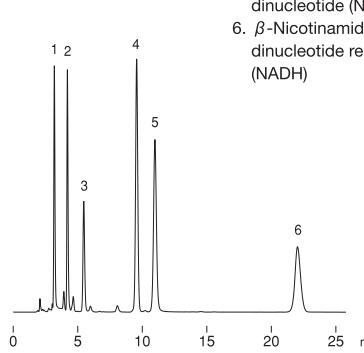
(S000803B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)150  $\times$  4.6 mm I.D.Eluent : 50 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 5.9)/acetonitrile (90/10)

Flow rate : 1.0 mL/min

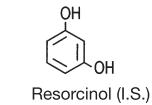
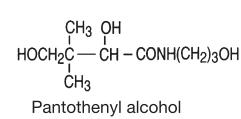
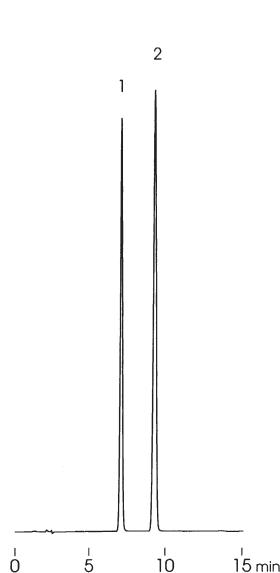
Temperature : 37 °C

Detection : UV at 260 nm, 0.32 AUFS

Injection : 10  $\mu$ L (0.1 mg/mL)ニコチン酸誘導体  
Nicotinic acid and derivatives

1. Nicotinamide adenine dinucleotide phosphate oxidized form (NADP)
2. Nicotinic acid
3. Nicotinamide adenine dinucleotide phosphate reduced form (NADPH)
4. Nicotinamide
5.  $\beta$ -Nicotinamide adenine dinucleotide (NAD)
6.  $\beta$ -Nicotinamide adenine dinucleotide reduced form (NADH)

(F000707B)

パントテニルアルコール  
Pantothenyl alcohol

(S961119B)

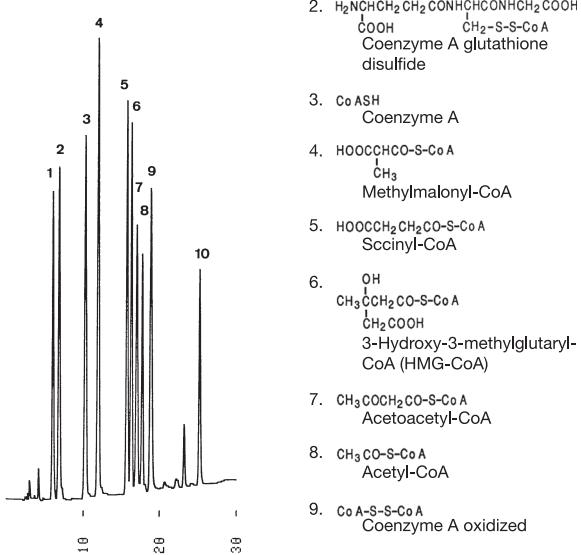
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)150  $\times$  4.6 mm I.D.

Eluent : acetonitrile/water (5/95)

Flow rate : 1.0 mL/min

Temperature : 37 °C

Detection : UV at 210 nm, 0.13 AUFS

Injection : 5  $\mu$ L (0.05 ~ 0.4 mg/mL)補酵素 A 誘導体  
Coenzyme A and derivatives

1. HOOCCH<sub>2</sub>CO-S-CoA  
Malonyl-CoA
2. H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>CONHCHCONHCH<sub>2</sub>COOH  
 $\text{COOH} \quad \text{CH}_2\text{-S-S-CoA}$   
Coenzyme A glutathione disulfide
3. CoASH  
Coenzyme A
4. HOOCCHCO-S-CoA  
 $\text{CH}_3$   
Methylmalonyl-CoA
5. HOOCCH<sub>2</sub>CH<sub>2</sub>CO-S-CoA  
Succinyl-CoA
6. OH  
 $\text{CH}_3\text{CH}_2\text{CO-S-CoA}$   
 $\text{CH}_2\text{COOH}$   
3-Hydroxy-3-methylglutaryl-CoA (HMG-CoA)
7. CH<sub>3</sub>COCH<sub>2</sub>CO-S-CoA  
Acetoacetyl-CoA
8. CH<sub>3</sub>CO-S-CoA  
Acetyl-CoA
9. CoA-S-S-CoA  
Coenzyme A oxidized
10. CH<sub>3</sub>CH<sub>2</sub>CO-S-CoA  
Propionyl-CoA

Courtesy of Dr. Takamura, Ibaraki University

(S940630E)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)150  $\times$  4.6 mm I.D.Eluent : A) methanol/50 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)B) methanol/50 mM KH<sub>2</sub>PO<sub>4</sub> (30/70)

10% B (0-5 min), 10-100% B (5-30 min)

Flow rate : 0.7 mL/min

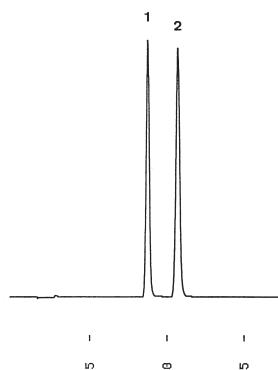
Temperature : 37 °C

Detection : UV at 260 nm, 0.016 AUFS

Injection : 10  $\mu$ L (16.7 nmol/mL)

L-アスコルビン酸およびエリソルビン酸  
L-Ascorbic acid and erythorbic acid

1. Erythorbic acid  
2. L-Ascorbic acid (Vitamin C)

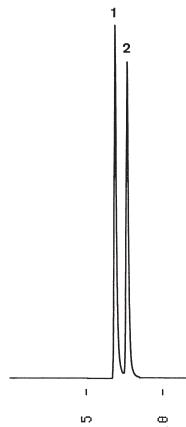


(T910425A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 250 nm, 0.16 AUFS  
Injection : 10 μL (0.1 mg/mL)

L-アスコルビン酸およびエリソルビン酸  
L-Ascorbic acid and erythorbic acid

1. L-Ascorbic acid (Vitamin C)  
2. Erythorbic acid

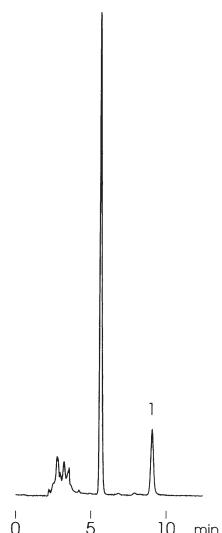


(G910523N)

Column : YMC-Pack ODS-AM (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 20 mM CH<sub>3</sub>COONH<sub>4</sub> in 5 mM tetrabutylammonium bromide  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 250 nm, 0.08 AUFS  
Injection : 5 μL (0.05 mg/mL)

L-アスコルビン酸の2,4-DNPH誘導体  
2,4-Dinitrophenylhydrazone of L-Ascorbic acid

1. L-Ascorbic acid 2,4-DNPH

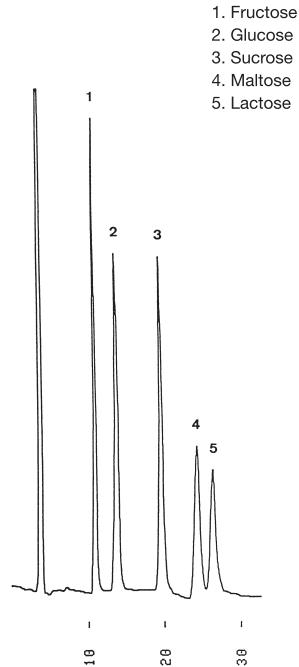


(C970808K)

Column : YMC-Pack SIL (5 μm, 12 nm)  
150 × 6.0 mm I.D.  
Eluent : hexane/ethyl acetate/2-propanol/acetic acid (40/30/2/1)  
Flow rate : 1.5 mL/min  
Temperature : 35 °C  
Detection : VIS at 540 nm, 0.01 AUFS  
Injection : 20 μL (10 μg/mL)

## 単糖および二糖類

## Monosaccharides and disaccharides

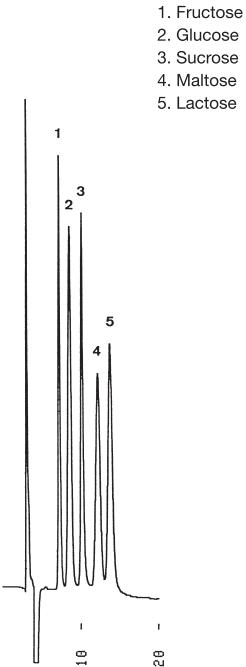


(T910726A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (75/25)  
Flow rate : 1.0 mL/min  
Temperature : 26 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 5 μL (14.3 ~ 28.6 mg/mL)

## 単糖および二糖類

## Monosaccharides and disaccharides

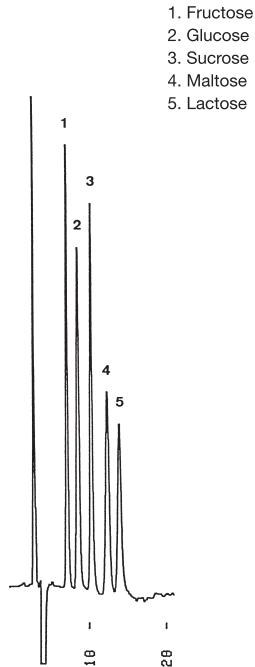


(T910723A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : ethanol/ethyl acetate/acetonitrile/water (30/40/5/25)  
Flow rate : 1.0 mL/min  
Temperature : 26 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 5 μL (14.3 ~ 28.6 mg/mL)

## 単糖および二糖類

## Monosaccharides and disaccharides



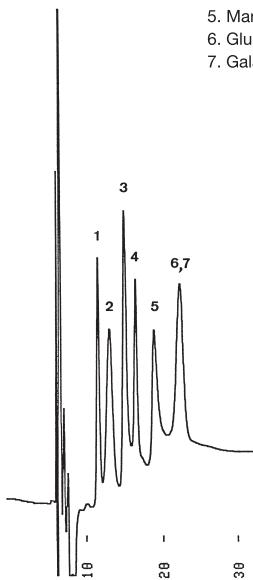
(T910718E)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : ethanol/ethyl acetate/acetonitrile/water (30/40/5/25)  
Flow rate : 1.0 mL/min  
Temperature : 35 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 5 μL (14.3 ~ 28.6 mg/mL)

## 単糖類

## Monosaccharides

1. Rhamnose  
2. Fucose  
3. Xylose  
4. Fructose  
5. Mannose  
6. Glucose  
7. Galactose

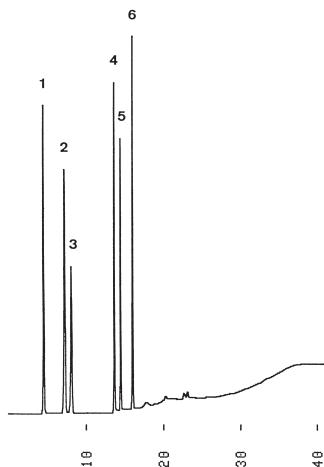


(T910718D)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D. × 2  
Eluent : ethanol/ethyl acetate/acetonitrile/water (30/30/23/17)  
Flow rate : 1.0 mL/min  
Temperature : 26 °C  
Detection : RI,  $16 \times 10^{-6}$  RIU/FS  
Injection : 25 μL (0.65 ~ 115.6 mg/mL)

不飽和コンドロ二糖  
Unsaturated chondro-disaccharides

1. ΔDi-0S
2. ΔDi-6S
3. ΔDi-4S
4. ΔDi-diS<sub>D</sub>
5. ΔDi-diS<sub>E</sub>
6. ΔDi-triS

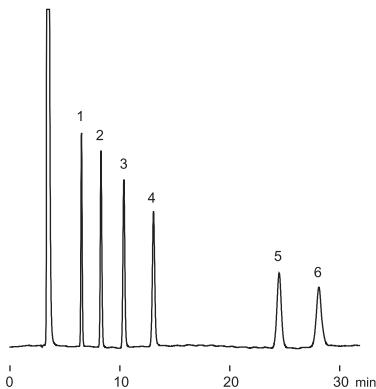


(T910920A)

Column	: YMC-Pack NH <sub>2</sub> (5 μm, 12 nm) 250 × 4.6 mm I.D.
Eluent	: A) 0.01 M NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> -(NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub> (pH 6.7) B) 0.5 M NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> -(NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub> (pH 6.7) 0% B (0-5 min), 0-100% B (5-30 min, linear), 100% B (30-40 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 232 nm, 0.32 AUFS
Injection	: 9 μL (0.12 ~ 0.24 mg/mL)

糖アルコール  
Sugar alcohols

1. Glycerol
2. Erythritol
3. Xylitol
4. Sorbitol
5. Maltitol
6. Lactitol

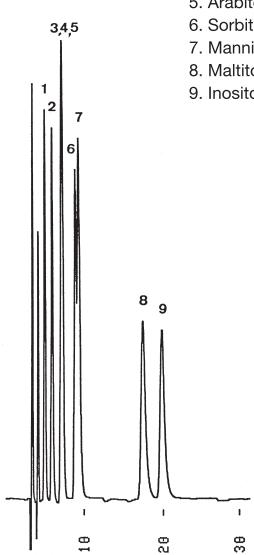


(F030603A)

Column	: YMC-Pack Polyamine II 250 × 4.6 mm I.D.
Eluent	: acetonitrile/water (75/25)
Flow rate	: 1.0 mL/min
Temperature	: 25 °C
Detection	: RI, 32 × 10 <sup>-6</sup> RIU/FS
Injection	: 5 μL (5.0 mg/mL)

糖アルコール  
Sugar alcohols

1. Glycerol
2. Erythritol
3. Xylitol
4. Ribitol
5. Arabinol
6. Sorbitol
7. Mannitol
8. Maltitol
9. Inositol

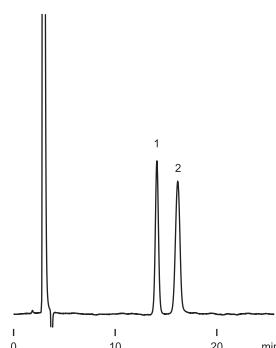


(T910718B)

Column	: YMC-Pack Polyamine II 250 × 4.6 mm I.D.
Eluent	: ethanol/ethyl acetate/acetonitrile/water (30/30/25/15)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: RI, 32 × 10 <sup>-6</sup> RIU/FS
Injection	: 15 μL (1.7 ~ 3.3 mg/mL)

パラチノースとパラチニット  
Palatinose and palatinit

1. Palatinose
2. Palatinit (\*)  
(Isomalt)



(\*)Mixture of 6-O-α-D-Glucopyranosyl-D-sorbitol  
and 1-O-α-D-Glucopyranosyl-D-mannitol

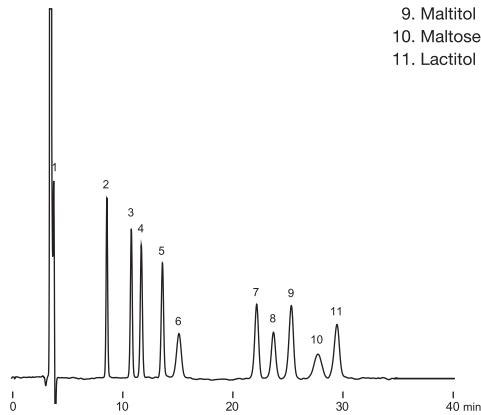
(F030616B)

Column	: YMC-Pack Polyamine II 250 × 4.6 mm I.D.
Eluent	: acetonitrile/water (70/30)
Flow rate	: 1.0 mL/min
Temperature	: 25 °C
Detection	: RI, 64 × 10 <sup>-6</sup> RIU/FS
Injection	: 15 μL (5.0 mg/mL)

## 2 糖類 Carbohydrates

2  
糖  
類

### 糖類および甘味料の一斉分析 Sugars and sweeteners

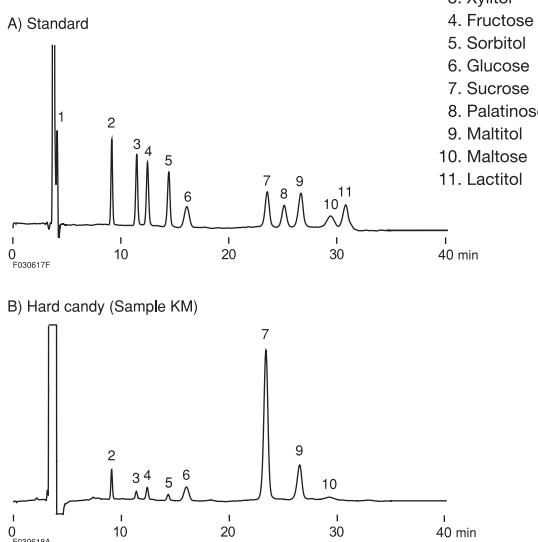


1. Sucratose
2. Erythritol
3. Xylitol
4. Fructose
5. Sorbitol
6. Glucose
7. Sucrose
8. Palatinose
9. Maltitol
10. Maltose
11. Lactitol

(F030613C)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (75/25)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 5 μL (5.0 mg/mL)

### 市販キャンディー中の糖類 Sugars in hard candy

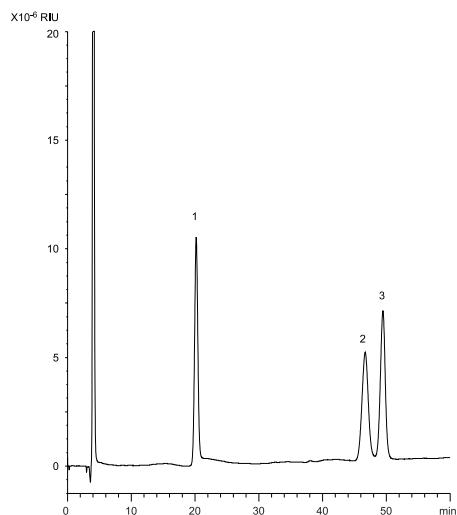


(F030618A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (75/25)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 5 μL  
Sample : A) 5 mg/mL  
B) 50 mg/mL (50% ethanol solution of candy)

### トレハロース Trehalose

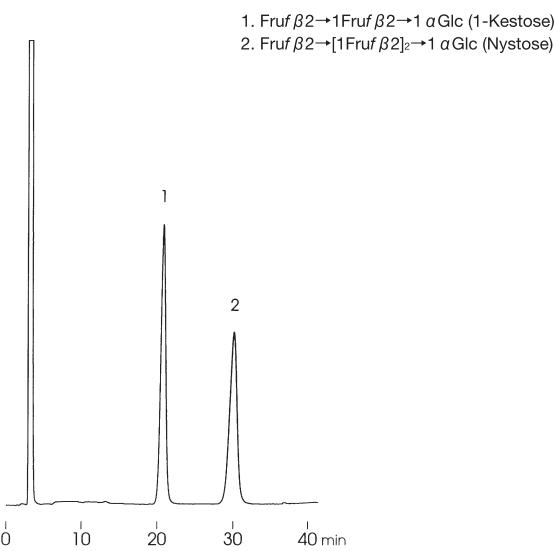
1. Glucose
2. Maltose
3. Trehalose



(P061002A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (80/20)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : RI  
Injection : 5 μL (10 ~ 60 mg/mL)

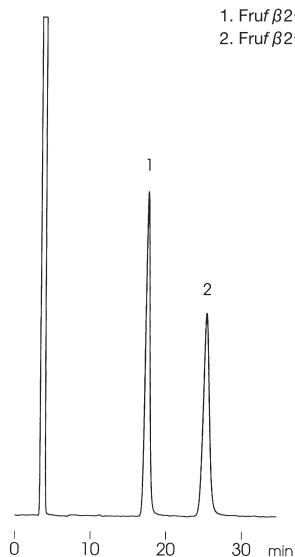
### オリゴ糖 Oligosaccharides



(A970625G)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient (26 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20 μL (4.0 mg/mL)

オリゴ糖  
Oligosaccharides

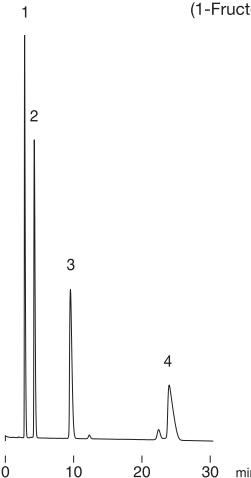


1. Fruf $\beta$ 2→1Fruf $\beta$ 2→1 $\alpha$ Glc (1-Kestose)  
2. Fruf $\beta$ 2→[1Fruf $\beta$ 2] $_2$ →1 $\alpha$ Glc (Nystose)

(A970701G)

Column : YMC-Pack NH<sub>2</sub> (5  $\mu$ m, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient (27 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20  $\mu$ L (4.0 mg/mL)

フルクトオリゴ糖  
Fructooligosaccharides

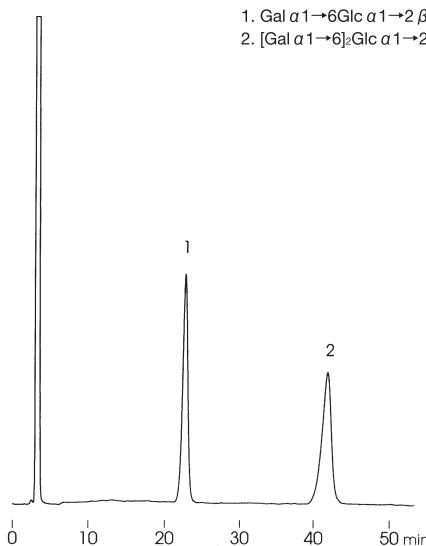


1. Fruf $\beta$ 2→1 $\alpha$ Glc (Sucrose)  
2. Fruf $\beta$ 2→1Fruf $\beta$ 2→1 $\alpha$ Glc (1-Kestose)  
3. Fruf $\beta$ 2→[1Fruf $\beta$ 2] $_2$ →1 $\alpha$ Glc (Nystose)  
4. Fruf $\beta$ 2→[1Fruf $\beta$ 2] $_3$ →1 $\alpha$ Glc (1-*Fructofuranosyl-D-nystose*)

(F000725B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : RI,  $64 \times 10^{-6}$  RIU/FS  
Injection : 5  $\mu$ L (10 mg/mL)

オリゴ糖  
Oligosaccharides

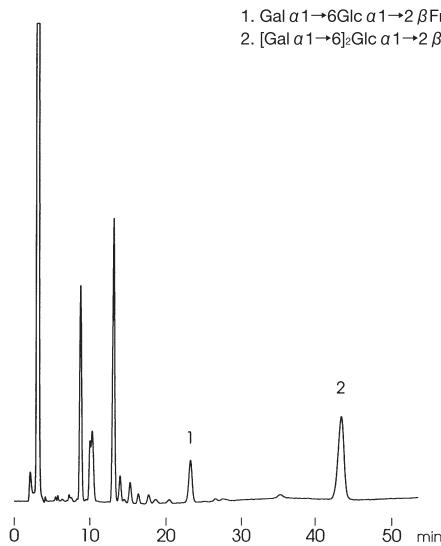


1. Gal $\alpha$ 1→6Glc $\alpha$ 1→2 $\beta$ Fruf (Raffinose)  
2. [Gal $\alpha$ 1→6] $_2$ Glc $\alpha$ 1→2 $\beta$ Fruf (Stachyose)

(A970627F)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient (26 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20  $\mu$ L (4.0 mg/mL)

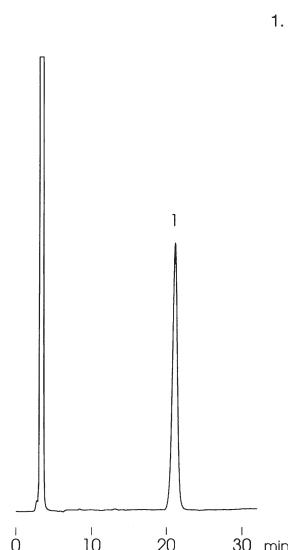
市販清涼飲料水のオリゴ糖  
Oligosaccharides of soft drink



1. Gal $\alpha$ 1→6Glc $\alpha$ 1→2 $\beta$ Fruf (Raffinose)  
2. [Gal $\alpha$ 1→6] $_2$ Glc $\alpha$ 1→2 $\beta$ Fruf (Stachyose)

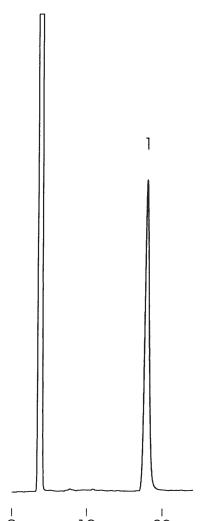
(A970630C)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient (27 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 10  $\mu$ L  
Sample : 10 times dilution with water

オリゴ糖  
Oligosaccharides

(A970628H)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient (26 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20  $\mu$ L (4.0 mg/mL)

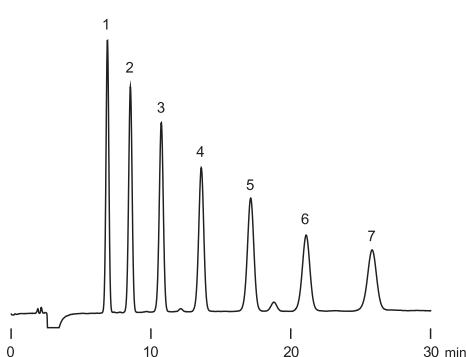
オリゴ糖  
Oligosaccharides

(A970703A)

Column : YMC-Pack NH<sub>2</sub> (5  $\mu$ m, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient (27 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20  $\mu$ L (4.0 mg/mL)

マルトオリゴ糖 (G<sub>1</sub> ~ G<sub>7</sub>)  
Maltooligosaccharides (G<sub>1</sub> ~ G<sub>7</sub>)

1. Glucose (G<sub>1</sub>)
2. Maltose (G<sub>2</sub>)
3. Maltotriose (G<sub>3</sub>)
4. Maltotetraose (G<sub>4</sub>)
5. Maltpentaose (G<sub>5</sub>)
6. Maltohexaose (G<sub>6</sub>)
7. Maltoheptaose (G<sub>7</sub>)

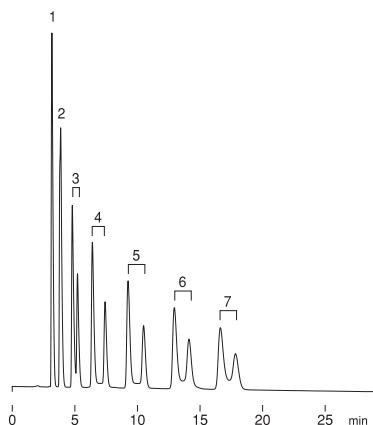


(F030620A)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (60/40)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 10  $\mu$ L (2.4 mg/mL)

マルトオリゴ糖 (G<sub>1</sub> ~ G<sub>7</sub>)  
Maltooligosaccharides (G<sub>1</sub> ~ G<sub>7</sub>)

1. Glucose (G<sub>1</sub>)
2. Maltose (G<sub>2</sub>)
3. Maltotriose (G<sub>3</sub>)
4. Maltotetraose (G<sub>4</sub>)
5. Maltpentaose (G<sub>5</sub>)
6. Maltohexaose (G<sub>6</sub>)
7. Maltoheptaose (G<sub>7</sub>)

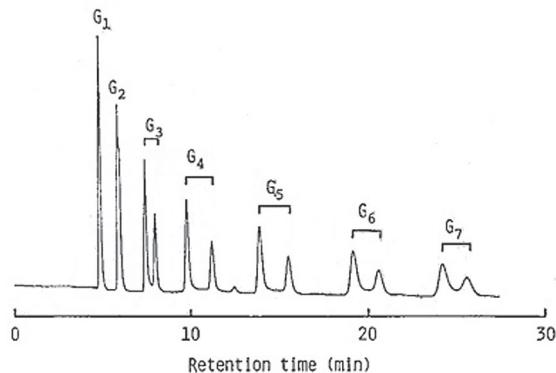


(F000612D)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (26 °C)  
Detection : RI,  $64 \times 10^{-6}$  RIU/FS  
Injection : 10  $\mu$ L (5.0 mg/mL)

**マルトオリゴ糖 ( $G_1 \sim G_7$ )**  
Maltooligosaccharides ( $G_1 \sim G_7$ )

1. Glucose ( $G_1$ )
2. Maltose ( $G_2$ )
3. Maltotriose ( $G_3$ )
4. Maltotetraose ( $G_4$ )
5. Maltopentaose ( $G_5$ )
6. Maltohexaose ( $G_6$ )
7. Maltoheptaose ( $G_7$ )

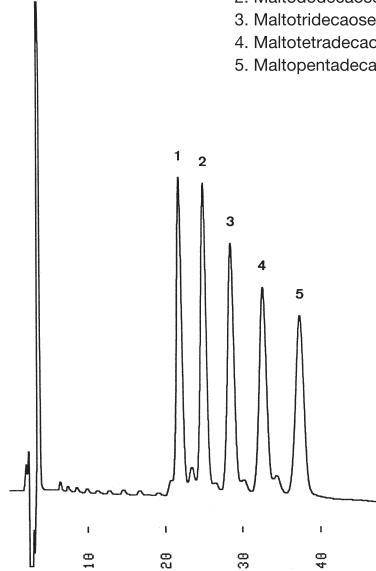


Courtesy of Dr.Kimura and Dr.Chiba, Hokkaido University, Japan (Y910501A)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
250  $\times$  10.0 mm I.D.  
Eluent : water  
Flow rate : 3.0 mL/min  
Temperature : ambient (25 °C)  
Detection : RI

**マルトオリゴ糖 ( $G_{11} \sim G_{15}$ )**  
Maltooligosaccharides ( $G_{11} \sim G_{15}$ )

1. Maltoundecaose ( $G_{11}$ )
2. Maltododecaose ( $G_{12}$ )
3. Maltotridecaose ( $G_{13}$ )
4. Maltotetradecaose ( $G_{14}$ )
5. Maltopentadecaose ( $G_{15}$ )

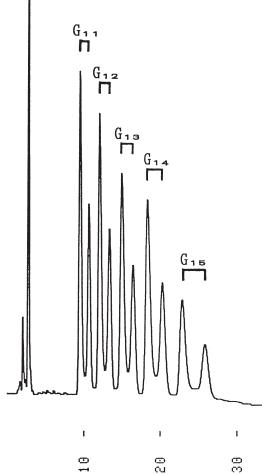


(T910718A)

Column : YMC-Pack Polyamine II  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (55/45)  
Flow rate : 1.0 mL/min  
Temperature : 26 °C  
Detection : RI, 32  $\times$  10<sup>-6</sup> RIU/FS  
Injection : 200  $\mu$ L (0.71 ~ 0.95 mg/mL)  
Sample : Manufactured by Nakano Vinegar Co., Ltd.,  
Nakano Central Research Institute

**マルトオリゴ糖 ( $G_{11} \sim G_{15}$ )**  
Maltooligosaccharides ( $G_{11} \sim G_{15}$ )

1. Maltoundecaose ( $G_{11}$ )
2. Maltododecaose ( $G_{12}$ )
3. Maltotridecaose ( $G_{13}$ )
4. Maltotetradecaose ( $G_{14}$ )
5. Maltopentadecaose ( $G_{15}$ )

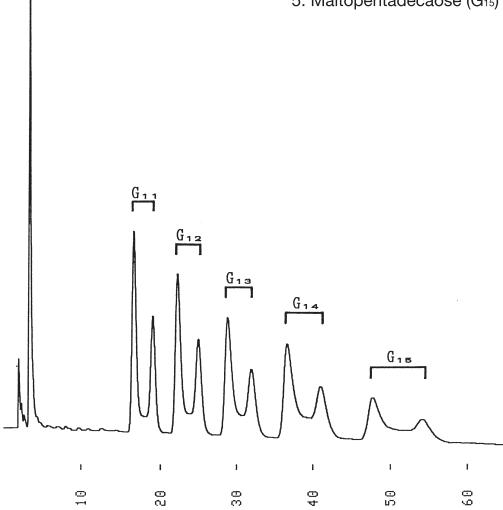


(M910604K)

Column : YMC-Pack ODS-A (5  $\mu$ m, 30 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : 20 °C  
Detection : RI, 8  $\times$  10<sup>-6</sup> RIU/FS  
Injection : 25  $\mu$ L (1 mg/mL)  
Sample : Manufactured by Nakano Vinegar Co., Ltd.,  
Nakano Central Research Institute

**マルトオリゴ糖 ( $G_{11} \sim G_{15}$ )**  
Maltooligosaccharides ( $G_{11} \sim G_{15}$ )

1. Maltoundecaose ( $G_{11}$ )
2. Maltododecaose ( $G_{12}$ )
3. Maltotridecaose ( $G_{13}$ )
4. Maltotetradecaose ( $G_{14}$ )
5. Maltopentadecaose ( $G_{15}$ )

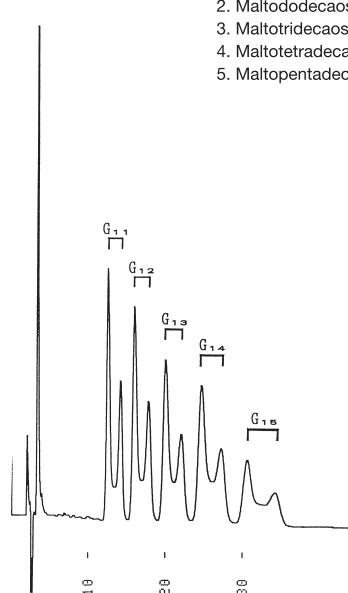


(M910604L)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : 20 °C  
Detection : RI, 8  $\times$  10<sup>-6</sup> RIU/FS  
Injection : 25  $\mu$ L (1 mg/mL)  
Sample : Manufactured by Nakano Vinegar Co., Ltd.,  
Nakano Central Research Institute

**マルトオリゴ糖 (G<sub>11</sub> ~ G<sub>15</sub>)**  
**Maltooligosaccharides (G<sub>11</sub> ~ G<sub>15</sub>)**

1. Maltoundecaose (G<sub>11</sub>)
2. Maltododecaose (G<sub>12</sub>)
3. Maltotridecaose (G<sub>13</sub>)
4. Maltotetradecaose (G<sub>14</sub>)
5. Malpentadecaose (G<sub>15</sub>)

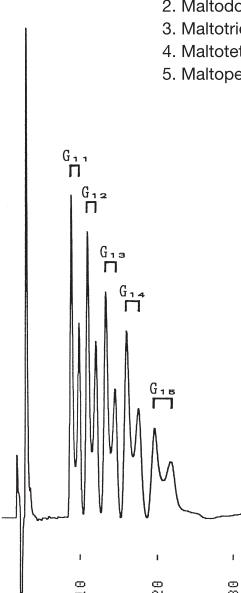


(M910604M)

Column : YMC-Pack ODS-AQ (5 μm, 12 nm)  
           150 × 4.6 mm I.D.  
  Eluent : methanol/water (5/995)  
  Flow rate : 1.0 mL/min  
  Temperature : 37 °C  
  Detection : RI, 8 × 10<sup>-6</sup> RIU/FS  
  Injection : 25 μL (1 mg/mL)  
  Sample : Manufactured by Nakano Vinegar Co., Ltd.,  
           Nakano Central Research Institute

**マルトオリゴ糖 (G<sub>11</sub> ~ G<sub>15</sub>)**  
**Maltooligosaccharides (G<sub>11</sub> ~ G<sub>15</sub>)**

1. Maltoundecaose (G<sub>11</sub>)
2. Maltododecaose (G<sub>12</sub>)
3. Maltotridecaose (G<sub>13</sub>)
4. Maltotetradecaose (G<sub>14</sub>)
5. Malpentadecaose (G<sub>15</sub>)

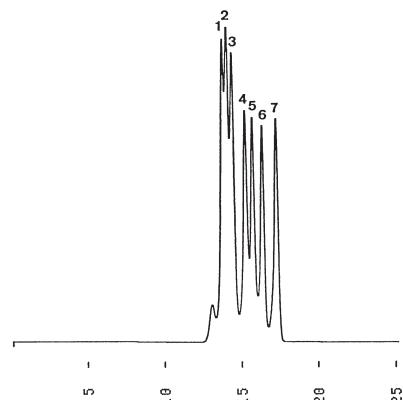


(M910604N)

Column : YMC-Pack ODS-A (5 μm, 12 nm)  
           150 × 4.6 mm I.D.  
  Eluent : methanol/water (5/995)  
  Flow rate : 1.0 mL/min  
  Temperature : 37 °C  
  Detection : RI, 8 × 10<sup>-6</sup> RIU/FS  
  Injection : 25 μL (1 mg/mL)  
  Sample : Manufactured by Nakano Vinegar Co., Ltd.,  
           Nakano Central Research Institute

**マルトオリゴ糖 (G<sub>1</sub> ~ G<sub>15</sub>)**  
**Maltooligosaccharides (G<sub>1</sub> ~ G<sub>15</sub>)**

1. Malpentadecaose (G<sub>15</sub>)
2. Maltotridecaose (G<sub>13</sub>)
3. Maltoundecaose (G<sub>11</sub>)
4. Maltoheptaose (G<sub>7</sub>)
5. Malpentaoose (G<sub>5</sub>)
6. Maltotriose (G<sub>3</sub>)
7. Glucose (G<sub>1</sub>)

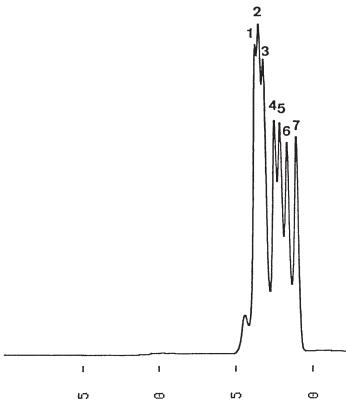


(G911216E)

Column : YMC-Pack Diol-60  
           500 × 8.0 mm I.D.  
  Eluent : water  
  Flow rate : 1.0 mL/min  
  Temperature : ambient (24 °C)  
  Detection : RI, 64 × 10<sup>-6</sup> RIU/FS  
  Injection : 60 μL (0.60 ~ 0.75 mg/mL)

**マルトオリゴ糖 (G<sub>1</sub> ~ G<sub>15</sub>)**  
**Maltooligosaccharides (G<sub>1</sub> ~ G<sub>15</sub>)**

1. Malpentadecaose (G<sub>15</sub>)
2. Maltotridecaose (G<sub>13</sub>)
3. Maltoundecaose (G<sub>11</sub>)
4. Maltoheptaose (G<sub>7</sub>)
5. Malpentaoose (G<sub>5</sub>)
6. Maltotriose (G<sub>3</sub>)
7. Glucose (G<sub>1</sub>)

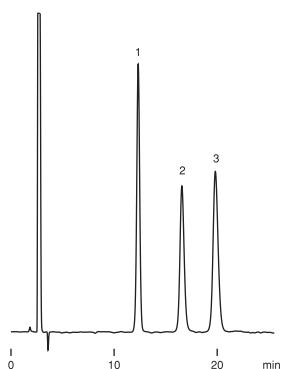


(G911216F)

Column : YMC-Pack Diol-120  
           500 × 8.0 mm I.D.  
  Eluent : water  
  Flow rate : 1.0 mL/min  
  Temperature : ambient (24 °C)  
  Detection : RI, 64 × 10<sup>-6</sup> RIU/FS  
  Injection : 60 μL (0.60 ~ 0.75 mg/mL)

サイクロデキストリン  
Cyclodextrins

1.  $\alpha$ -Cyclodextrin  
2.  $\beta$ -Cyclodextrin  
3.  $\gamma$ -Cyclodextrin

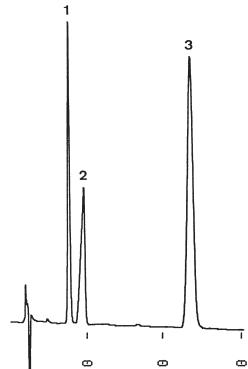


(F030617B)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (60/40)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 10  $\mu$ L (0.4 ~ 0.5 mg/mL)

サイクロデキストリン  
Cyclodextrins

1.  $\gamma$ -Cyclodextrin  
2.  $\alpha$ -Cyclodextrin  
3.  $\beta$ -Cyclodextrin

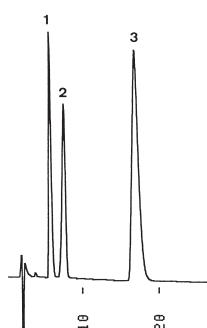


(M910417B)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : methanol/water (7/93)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 8  $\mu$ L (5 ~ 15 mg/mL)

サイクロデキストリン  
Cyclodextrins

1.  $\gamma$ -Cyclodextrin  
2.  $\alpha$ -Cyclodextrin  
3.  $\beta$ -Cyclodextrin

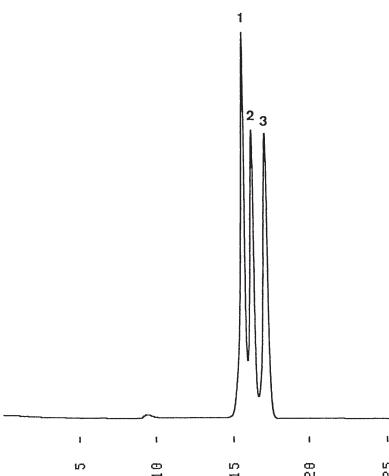


(M910417A)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : methanol/water (7/93)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 8  $\mu$ L (5 ~ 15 mg/mL)

サイクロデキストリン  
Cyclodextrins

1.  $\gamma$ -Cyclodextrin  
2.  $\beta$ -Cyclodextrin  
3.  $\alpha$ -Cyclodextrin

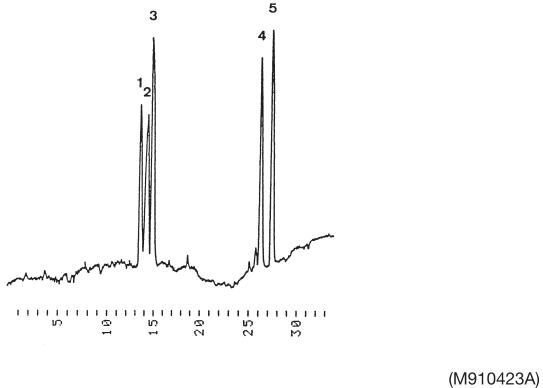


(G911216I)

Column : YMC-Pack Diol-60  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 30  $\mu$ L (1.67 mg/mL)

## サイクロデキストリン Cyclodextrins

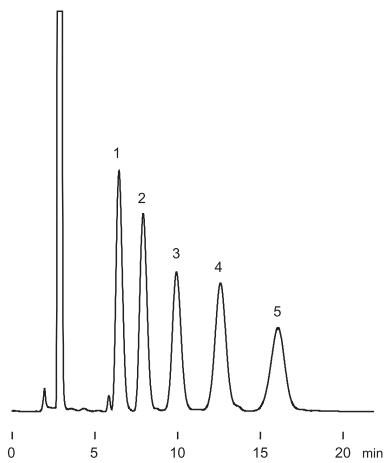
1.  $\gamma$ -Cyclodextrin
  2.  $\alpha$ -Cyclodextrin
  3.  $\beta$ -Cyclodextrin
  4. O-Dimethyl-  $\beta$ -cyclodextrin
  5. O-Triethyl-  $\beta$ -cyclodextrin



Column	: YMC-Pack ODS-A (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) water B) methanol 2% B (0-5 min), 2-30% B (5-15 min, linear), 30-100% B (15-20 min, linear), 100% B (20-30 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: Evaporative Mass Analyzer (ACS Ltd.) Temp 150 Time Constant 5 PMT 3 Attenuation 16 Pressure 20 psi
Injection	: 200 $\mu$ L (1.5 ~ 15 mg/mL)

### キチンオリゴ糖 *N*-Acetyl-chitooligosaccharides

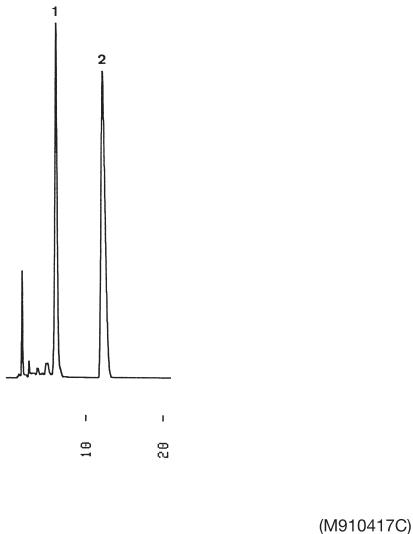
1. *N*-Acetylglucosamine
  2. *N*-Acetyl-chitobiose
  3. *N*-Acetyl-chitotriose
  4. *N*-Acetyl-chitotetraose
  5. *N*-Acetyl-chitopentaose



**Column** : YMC-Pack Polyamine II  
           250 × 4.6 mm I.D.  
**Eluent** : acetonitrile/water (65/35)  
**Flow rate** : 1.0 mL/min  
**Temperature** : 25 °C  
**Detection** : RI, 16 × 10<sup>-6</sup> RIU/FS  
**Injection** : 15  $\mu$ L (0.2 mg/mL)

# サイクロデキストリン Cyclodextrins

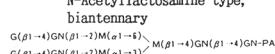
1. O-Dimethyl-  $\beta$ -cyclodextrin
  2. O-Triethyl-  $\beta$ -cyclodextrin



Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
           150  $\times$  4.6 mm I.D.  
 Eluent : methanol/water (80/20)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : RI, 32  $\times$  10<sup>-6</sup> RIU/FS  
 Injection : 5  $\mu$ L (15 ~ 20 mg/mL)

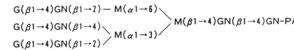
## ピリジルアミノ化 (PA) 糖 Pyridylamino (PA)-Sugar chains

1. PA-Sugar Chain 014  
*N*-Acetyllactosamine type,  
 agalacto tetraantennary

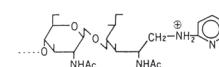


- ### 3. PA-Sugar Chain 002

N-Acetyllactosamine type,  
triantennary



G : galactose  
 GN : N-acetylglucosamine  
 M : mannose  
 F : fucose  
 PA : pyridylamino(group)



(F030601A)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : methanol/20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (5/95)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : FLS at Ex 320 nm, Em 400 nm, 8 mV/FS  
 Injection : 2  $\mu$ L (3.3 pmol/mL)  
 Sample : PA-Sugar Chain Series, manufactured by TAKARA SHUZO CO., LTD.

## ピリジルアミノ化(PA)糖 Pyridylamino (PA)-Sugar chains

## ピリジルアミノ化(PA)糖

## Pyridylamino (PA)-Sugar chains

Column : YMC-Pack ODS-A (5  $\mu$ m, 30 nm)  
           150  $\times$  4.6 mm I.D.  
 Eluent : methanol/20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (5/95)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : FLS at Ex 320 nm, Em 400 nm, 16 mV/FS  
 Injection : 2  $\mu$ L (3.3 pmol/mL)  
 Sample : PA-Sugar Chain Series, manufactured by TAKARA SHUZO CO., LTD.

## ピリジルアミノ化 (PA) 糖 Pyridylamino (PA)-Sugar chains

## ピリドラムノミニ化(PA)糖 Pyridylamino (PA)-Sugar chains

1. PA-Sugar Chain 014

N-Acetyllactosamine type,  
galacto tetraantennary

2. PA-Sugar Chain 001  
 N-Acetyllactosamine type,  
 biantennary

3. PA-Sugar Chain 002

$\text{N-Acetyl lactosamine type, triantennary}$

$\text{4) } \text{GN}(\beta 1 \rightarrow 2) - M(\alpha 1 \rightarrow 6) \text{ 4) } \text{GN}(\beta 1 \rightarrow 4) \text{ 4) } \text{GN}(\beta 1 \rightarrow 2)$

$M(\beta 1 \rightarrow 4) \text{ GN}(\beta 1 \rightarrow 4) \text{ GN-F}$

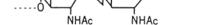
G : galactose  
 GN : N-acetylglucosamine  
 M : mannose  
 F : fucose  
 PA : pyridylamino(group)

(G910607A)

Column	: YMC-Pack ODS-A (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: methanol/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (5/95)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: FLS at Ex 320 nm, Em 400 nm, 16 mV/FS
Injection	: 2 $\mu$ L (3.3 pmol/mL)
Sample	: PA-Sugar Chain Series, manufactured by TAKARA SHUZO CO., LTD.

## ピリジルアミノ化 (PA) 糖 Pyridylamino (PA)-Sugar chains

• • • ( ) - 3

	(G910620B)
Column	: YMC-Pack Polyamine II 150 × 4.6 mm I.D.
Eluent	: acetonitrile/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (60/40)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: FLS at Ex 320 nm, Em 400 nm, 8 mV/FS
Injection	: 5 μL (3.3 pmol/mL)
Sample	: PA-Sugar Chain Series, manufactured by TAKARA SHIZUO CO., LTD

## ピリジルアミノ化 (PA) 糖 Pyridylamino (PA)-Sugar chains

3. *Chlorophytum* ( ) 3

1. PA-Sugar Chain 014  
 N-Acetylglactosamine type,  
 galacto tetraantennary

2. PA-Sugar Chain 001  
 N-Acetyllactosamine type,  
 biantennary

$$\rightarrow_4 \text{GN}(\beta 1 \rightarrow 2) \text{M}(\alpha 1 \rightarrow 6) \swarrow \searrow \rightarrow_3 \text{M}(\beta 1 \rightarrow 4) \text{GN}(\beta 1 \rightarrow 4) \text{GN-PA}$$

$$\rightarrow_3 \text{GNA}(\beta 1 \rightarrow 3) \text{M}(\alpha 1 \rightarrow 6) \swarrow \searrow \rightarrow_4$$

3. PA-Sugar Chain 002  
 N-Acetyllactosamine type,  
 triantennary

$$\begin{array}{c}
 \text{GN}(\beta 1 \rightarrow 2) - M(\alpha 1 \rightarrow 6) \\
 | \\
 \text{GN}(\beta 1 \rightarrow 4) - M(\alpha 1 \rightarrow 3)
 \end{array}$$

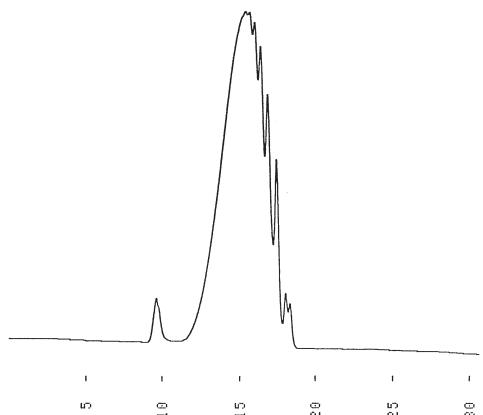
G : galactose  
 GN : N-acetylglucosamine  
 M : mannose  
 F : fucose  
 PA : pyridylamino(group)

(G910620A)

Column : YMC-Pack Polyamine II  
 150 × 4.6 mm I.D.  
 Eluent : methanol/20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (80/20)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : FLS at Ex 320 nm, Em 400 nm, 4 mV/FS  
 Injection : 3  $\mu$ L (3.3 pmol/mL)  
 Sample : PA-Sugar Chain Series, manufactured by TAKARA SHUZO CO., LTD

**ポリデキストロース  
Polydextrose**

1. Polydextrose II

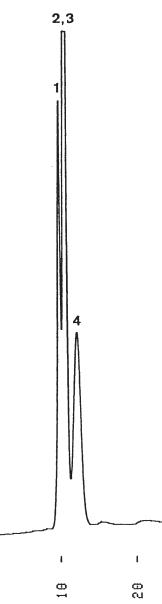


(G911226A)

Column : YMC-Pack Diol-60  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (25 °C)  
Detection : RI,  $64 \times 10^{-6}$  RIU/FS  
Injection : 40  $\mu$ L (25 mg/mL)

**プルラン  
Pullulans**

1. Pullulan P-800 (MW 853,000)
2. Pullulan P-50 (MW 48,000)
3. Pullulan P-20 (MW 23,700)
4. Pullulan P-5 (MW 5,800)

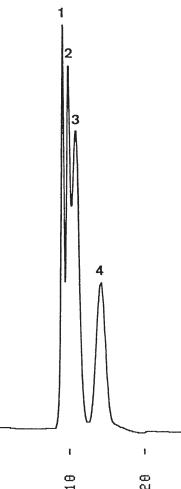


(G911216A)

Column : YMC-Pack Diol-60  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $16 \times 10^{-6}$  RIU/FS  
Injection : 180  $\mu$ L (0.25 mg/mL)  
Sample : Shodex STANDARD P-82, manufactured by SHOWA DENKO K.K.

**プルラン  
Pullulans**

1. Pullulan P-800 (MW 853,000)
2. Pullulan P-50 (MW 48,000)
3. Pullulan P-20 (MW 23,700)
4. Pullulan P-5 (MW 5,800)

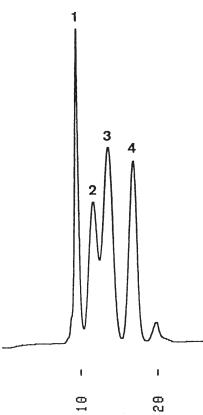


(G911216B)

Column : YMC-Pack Diol-120  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $16 \times 10^{-6}$  RIU/FS  
Injection : 180  $\mu$ L (0.25 mg/mL)  
Sample : Shodex STANDARD P-82, manufactured by SHOWA DENKO K.K.

**プルラン  
Pullulans**

1. Pullulan P-800 (MW 853,000)
2. Pullulan P-50 (MW 48,000)
3. Pullulan P-20 (MW 23,700)
4. Pullulan P-5 (MW 5,800)

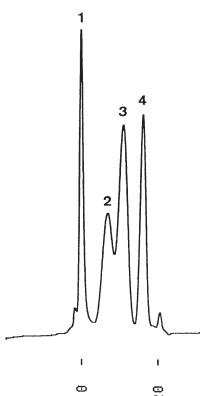


(G911216C)

Column : YMC-Pack Diol-200  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $16 \times 10^{-6}$  RIU/FS  
Injection : 180  $\mu$ L (0.25 mg/mL)  
Sample : Shodex STANDARD P-82, manufactured by SHOWA DENKO K.K.

プルラン  
Pullulans

1. Pullulan P-800 (MW 853,000)
2. Pullulan P-50 (MW 48,000)
3. Pullulan P-20 (MW 23,700)
4. Pullulan P-5 (MW 5,800)

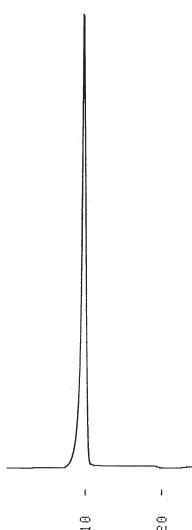


(G911216D)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $16 \times 10^{-6}$  RIU/FS  
Injection : 180  $\mu$ L (0.25 mg/mL)  
Sample : Shodex STANDARD P-82, manufactured by SHOWA DENKO K.K.

コンドロイチン  
Chondroitin

1. Chondroitin, Na salt

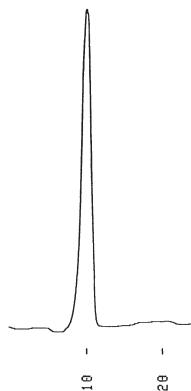


(G920107A)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20  $\mu$ L (5.0 mg/mL)

コンドロイチン硫酸 A  
Chondroitin sulfate A

1. Chondroitin sulfate A, Na salt

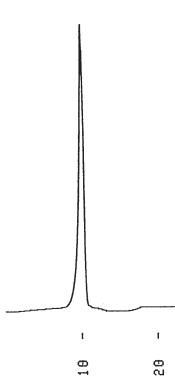


(G920107C)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $16 \times 10^{-6}$  RIU/FS  
Injection : 20  $\mu$ L (5.0 mg/mL)

コンドロイチン硫酸 B  
Chondroitin sulfate B

1. Chondroitin sulfate B, Na salt

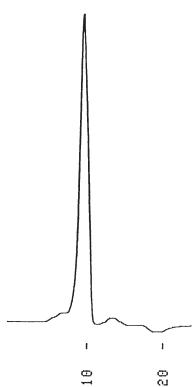


(G920107E)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20  $\mu$ L (5.0 mg/mL)

コンドロイチン硫酸 C  
Chondroitin sulfate C

1. Chondroitin sulfate C, Na salt

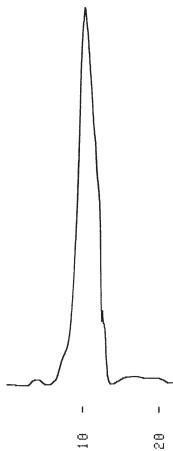


(G920107D)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $16 \times 10^{-6}$  RIU/FS  
Injection : 20 μL (5.0 mg/mL)

ヒアルロン酸  
Hyaluronic acid

1. Hyaluronic acid, Na salt

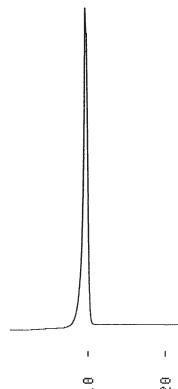


(G920107B)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $8 \times 10^{-6}$  RIU/FS  
Injection : 20 μL (5.0 mg/mL)

ヘパリン  
Heparin

1. Heparin, Na salt

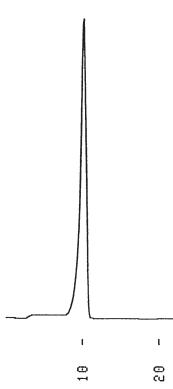


(G920107I)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20 μL (5.0 mg/mL)

ヘパラン硫酸  
Heparan sulfate

1. Heparan sulfate, Na salt

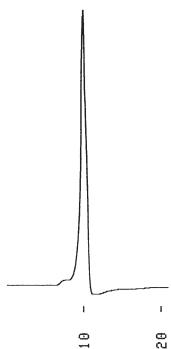


(G920107F)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20 μL (5.0 mg/mL)

ケラタン硫酸  
Keratan sulfate

1. Keratan sulfate, Na salt

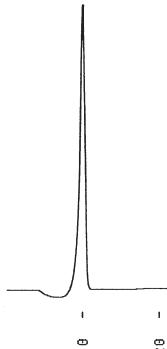


(G920107G)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20 μL (5.0 mg/mL)

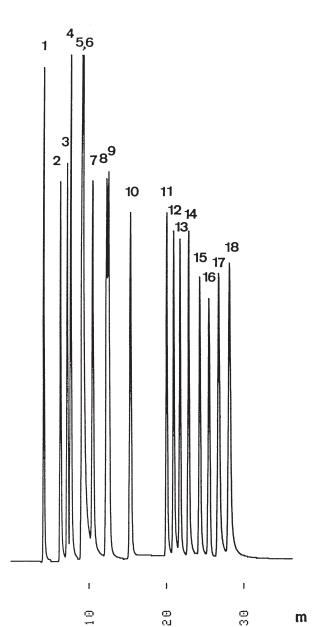
ケラタンポリ硫酸  
Keratan polysulfate

1. Keratan polysulfate, Na salt

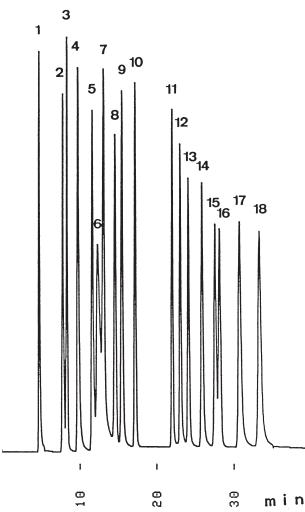


(G920107H)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : water  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : RI,  $32 \times 10^{-6}$  RIU/FS  
Injection : 20 μL (5.0 mg/mL)

核酸塩基・ヌクレオシド  
Nucleosides and bases

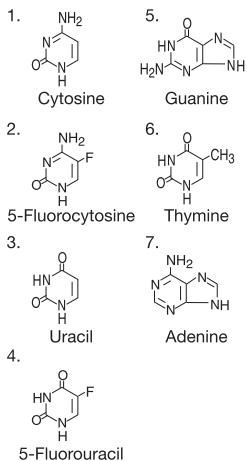
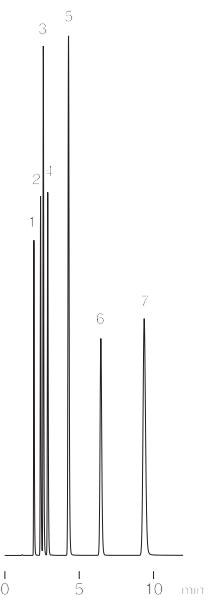
1. Cytocine
2. Cytidine
3. Uracil
4. Deoxycytidine
5. Guanine
6. Adenine
7. Hypoxanthine
8. Uridine
9. Xanthine
10. Thymine
11. Inosine
12. Guanosine
13. Deoxyinosine
14. Deoxyguanosine
15. Xanthosine
16. Thymidine
17. Adenosine
18. Deoxyadenosine

核酸塩基・ヌクレオシド  
Nucleosides and bases

1. Cytocine
2. Cytidine
3. Uracil
4. Deoxycytidine
5. Guanine
6. Adenine
7. Hypoxanthine
8. Uridine
9. Xanthine
10. Thymine
11. Inosine
12. Guanosine
13. Deoxyinosine
14. Deoxyguanosine
15. Xanthosine
16. Thymidine
17. Adenosine
18. Deoxyadenosine

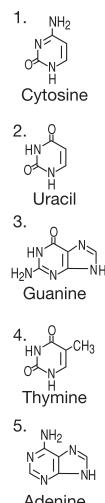
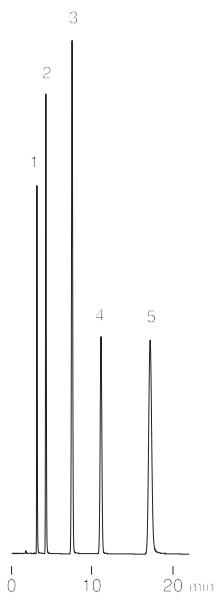
Column	: YMC-Pack ODS-A (5 $\mu$ m, 12 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM CH <sub>3</sub> COOH-CH <sub>3</sub> COONH <sub>4</sub> (pH 3.5) B) 20 mM CH <sub>3</sub> COOH-CH <sub>3</sub> COONH <sub>4</sub> (pH 3.5)/methanol (90/10) 30% B (0-5 min), 30-100% B (5-13 min, linear), 100% B (13-40 min)
Flow rate	: 0.7 mL/min
Temperature	: 30 °C
Detection	: UV at 260 nm, 0.08 AUFS
Injection	: 12 $\mu$ L (0.001 ~ 0.05 mg/mL)

Column	: YMC-Pack ODS-AQ (5 $\mu$ m, 12 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM CH <sub>3</sub> COOH-CH <sub>3</sub> COONH <sub>4</sub> (pH 3.5) B) 20 mM CH <sub>3</sub> COOH-CH <sub>3</sub> COONH <sub>4</sub> (pH 3.5)/methanol (90/10) 30% B (0-5 min), 30-100% B (5-13 min, linear), 100% B (13-40 min)
Flow rate	: 0.7 mL/min
Temperature	: 30 °C
Detection	: UV at 260 nm, 0.08 AUFS
Injection	: 12 $\mu$ L (0.001 ~ 0.05 mg/mL)

核酸塩基  
Nucleic acid bases

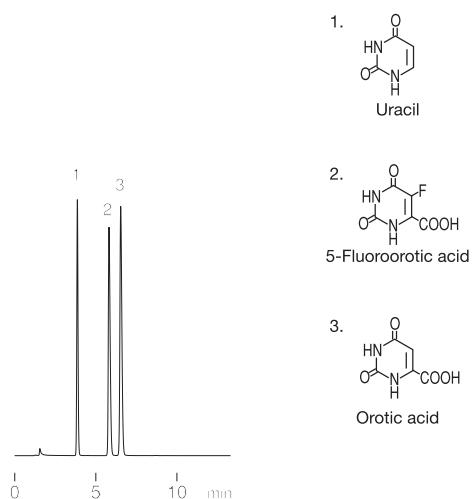
(J010209E)

Column	: Hydrosphere C18 (3 $\mu$ m, 12 nm) 100 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.9)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 254 nm, 0.128 AUFS
Injection	: 10 $\mu$ L (0.01 ~ 0.02 mg/mL)

核酸塩基  
Nucleic acid bases

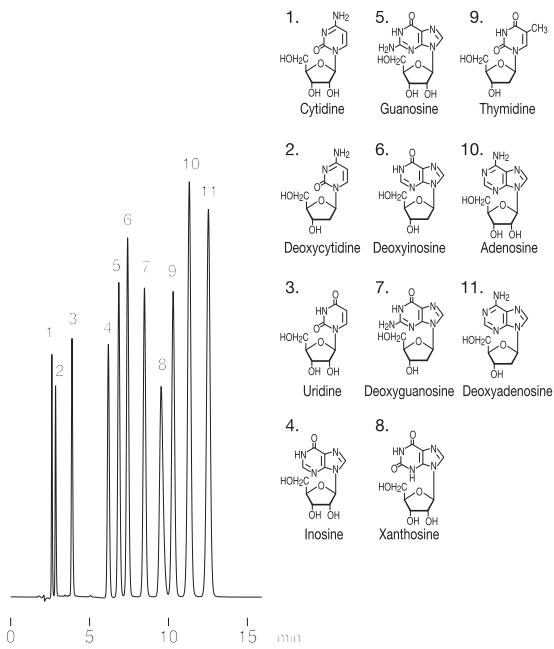
(S991029A)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.9)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 254 nm, 0.064 AUFS
Injection	: 8 $\mu$ L (0.01 ~ 0.02 mg/mL)

オロチン酸  
Orotic acid

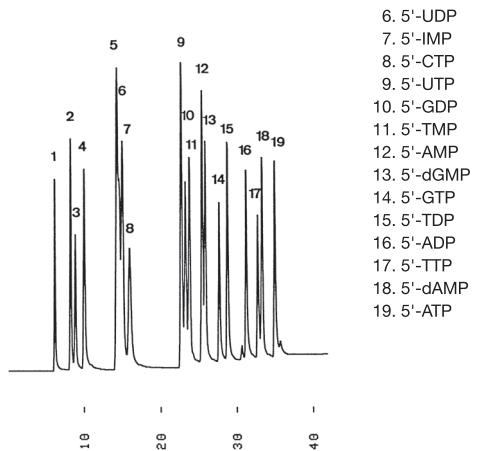
(A000711A)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM H<sub>3</sub>PO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.256 AUFS  
Injection : 10  $\mu$ L (0.015 ~ 0.1 mg/mL)

ヌクレオシド  
Nucleosides

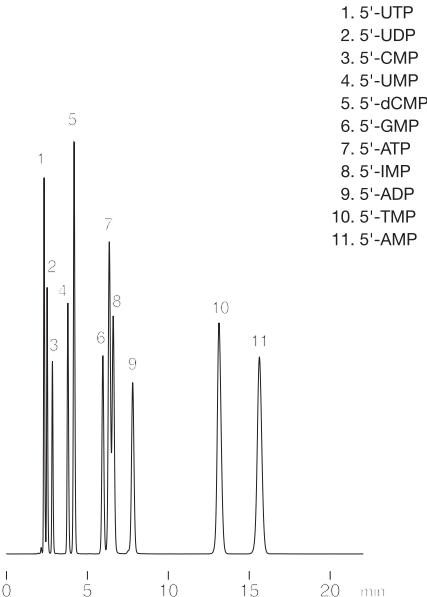
(A000802B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 3.5)/methanol (92/8)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.064 AUFS  
Injection : 15  $\mu$ L (5 ~ 15  $\mu$ g/mL)

ヌクレオチド  
Nucleotides

(T910424A)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : A) 0.2 M TEAA\* (pH 6.6)  
B) 0.2 M TEAA\* (pH 6.6)/acetonitrile (95/5)  
4% B (0-10 min), 4-100% B (10-35 min, linear), 100% B (35-50 min)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 14  $\mu$ L (0.029 ~ 0.16 mg/mL)  
\* TEAA : triethylamine-acetic acid

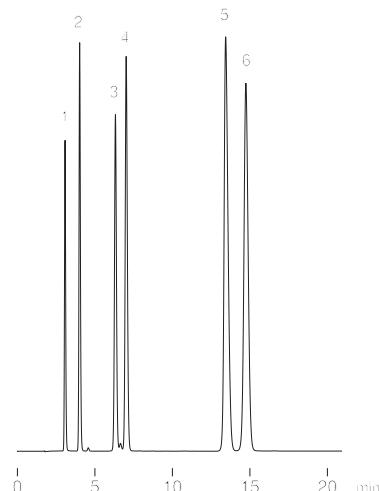
ヌクレオチド  
Nucleotides

(A000922A)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 100 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 5.5)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.256 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.15 mg/mL)

ヌクレオチド  
Nucleotides

1. 5'-CMP  
2. 5'-UMP  
3. 5'-GMP  
4. 5'-IMP  
5. 5'-TMP  
6. 5'-AMP

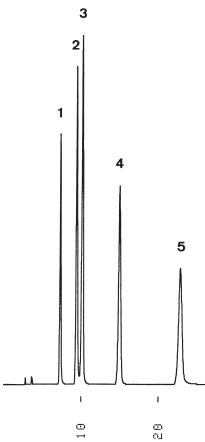


(A000912B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 100 mM KH<sub>2</sub>PO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.256 AUFS  
Injection : 10  $\mu$ L (0.1 ~ 0.3 mg/mL)

ヌクレオチド  
Nucleotides

1. 5'-CMP  
2. 5'-AMP  
3. 5'-UMP  
4. 5'-IMP  
5. 5'-GMP

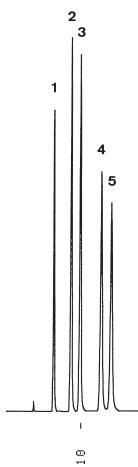


(T920525C)

Column : YMC-Pack Polyamine II  
250  $\times$  4.6 mm I.D.  
Eluent : 50 mM KH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 3.5)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.1 mg/mL)

ヌクレオチド  
Nucleotides

1. 5'-CMP  
2. 5'-AMP  
3. 5'-UMP  
4. 5'-IMP  
5. 5'-GMP

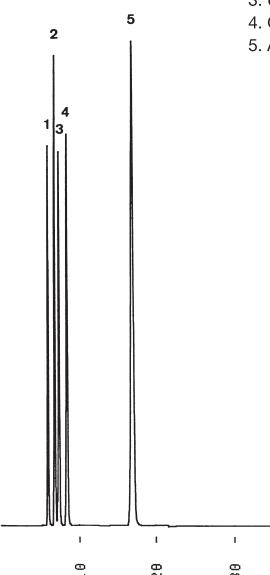


(T920525D)

Column : YMC-Pack NH<sub>2</sub> (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 50 mM KH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 3.5)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.1 mg/mL)

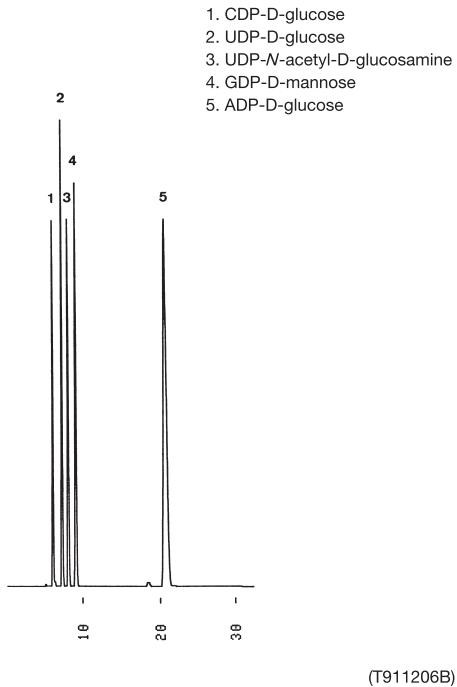
糖ヌクレオチド  
Sugar nucleotides

1. CDP-D-glucose  
2. UDP-D-glucose  
3. UDP-N-acetyl-D-glucosamine  
4. GDP-D-mannose  
5. ADP-D-glucose

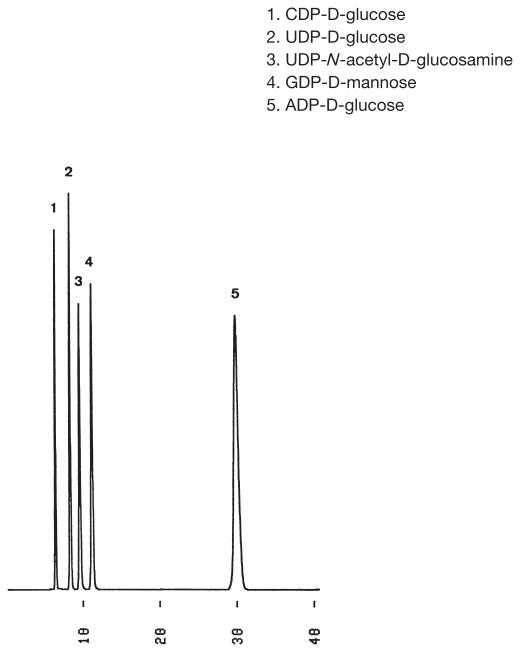


(T911206D)

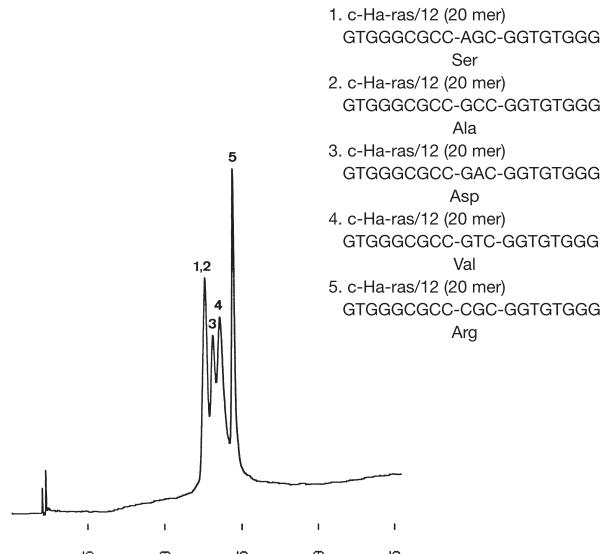
Column : YMC-Pack Ph (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 100 mM TEAA<sup>1)</sup> (pH 6.0)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.27 ~ 0.71 mg/mL)  
1) TEAA: triethylamine-acetic acid

糖ヌクレオチド  
Sugar nucleotides

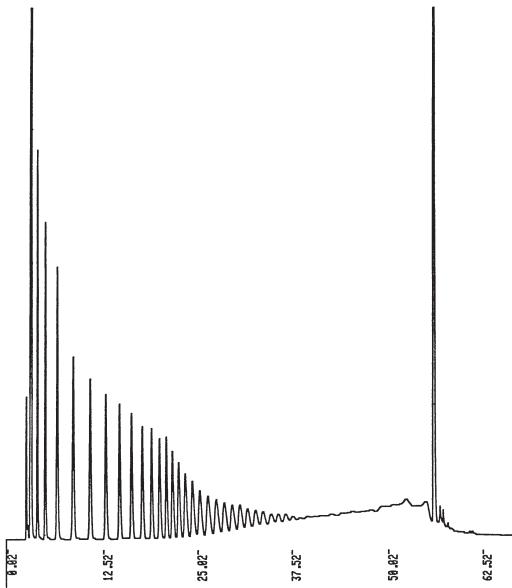
Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 20 mM TEAA<sup>1)</sup> (pH 5.7)/acetonitrile (99/1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.27 ~ 0.71 mg/mL)  
1) TEAA: triethylamine-acetic acid

糖ヌクレオチド  
Sugar nucleotides

Column : YMC-Pack ODS-A (5  $\mu$ m, 30 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 100 mM TEAA<sup>1)</sup> (pH 6.0)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.27 ~ 0.71 mg/mL)  
1) TEAA: triethylamine-acetic acid

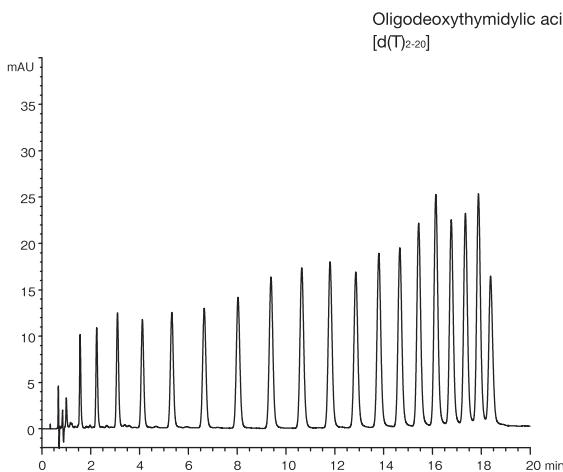
オリゴヌクレオチド  
Oligonucleotides

Column : YMC-Pack ODS-A (5  $\mu$ m, 30 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) 100 mM triethylamine-acetic acid (pH 6.5)/acetonitrile (94/6)  
B) 100 mM triethylamine-acetic acid (pH 6.5)/acetonitrile (85/15)  
0-100% B (0-25 min, linear)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.01 AUFS  
Injection : 15  $\mu$ L (2.0 pmol/ $\mu$ L)  
Sample : TAKARA ras Gene Probe set, manufactured by TAKARA SHUZO CO., LTD.

オリゴヌクレオチド, poly(A)  
Poly(A)

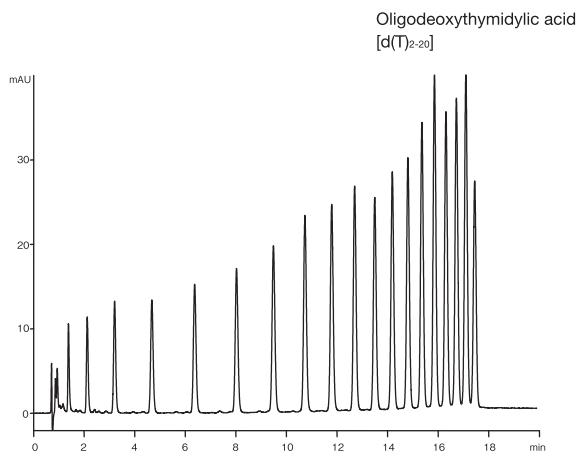
Courtesy of Dr. Y. Baba, Kobe Women's College of Pharmacy

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  6.0 mm I.D.  
Eluent : A) 0.1 M phosphate buffer (pH 7)  
B) 0.1 M phosphate buffer (pH 7)/acetonitrile (75/25)  
20-27% B (0-15 min), 27-35% B (15-90 min)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : UV at 260 nm  
Injection : 10  $\mu$ L  
Sample : Poly(A)

オリゴヌクレオチド, d(T)<sub>2-20</sub>  
Oligonucleotides, d(T)<sub>2-20</sub>

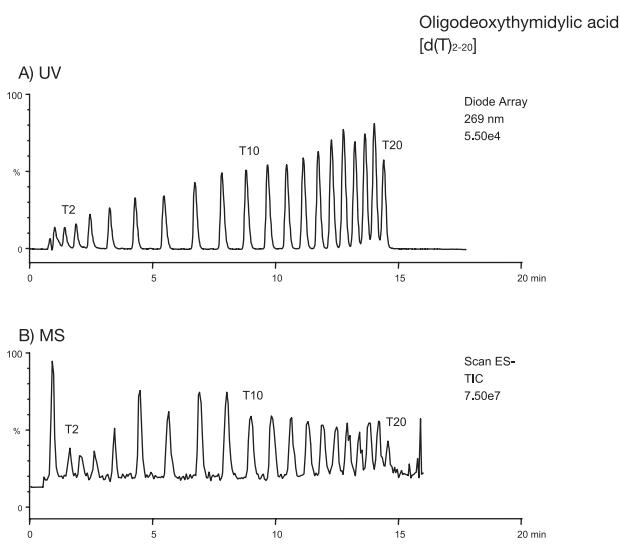
(F050126E)

Column	: Hydrosphere C18 (3 $\mu$ m, 12 nm) 50 $\times$ 4.6 mm I.D.
Eluent	: A) 100 mM triethylamine-acetic acid (pH 6.0) B) 100 mM triethylamine-acetic acid (pH 6.0)/acetonitrile (80/20) 50-65% B (0-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 35 °C
Detection	: UV at 269 nm
Injection	: 5 $\mu$ L (5 nmol/mL)

オリゴヌクレオチド, d(T)<sub>2-20</sub>  
Oligonucleotides, d(T)<sub>2-20</sub>

(F050423A)

Column	: Hydrosphere C18 (3 $\mu$ m, 12 nm) 50 $\times$ 4.6 mm I.D.
Eluent	: A) 10 mM di-n-butylamine-acetic acid (pH 6.0) B) 10 mM di-n-butylamine-acetic acid (pH 6.0)/methanol (20/80) 42-70% B (0-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 35 °C
Detection	: UV at 269 nm
Injection	: 5 $\mu$ L (5 nmol/mL)

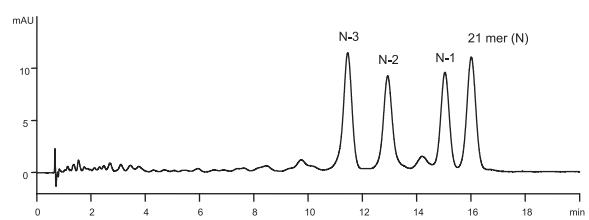
オリゴヌクレオチド d(T)<sub>2-20</sub> の LC/MS 分析  
LC/MS analysis of oligonucleotides d(T)<sub>2-20</sub>

(F060118A)

Column	: Hydrosphere C18 (3 $\mu$ m, 12 nm) 50 $\times$ 2.0 mm I.D.
Eluent	: A) 5 mM di-n-butylamine-acetic acid (pH 6.0) B) 5 mM di-n-butylamine-acetic acid (pH 6.0)/methanol (20/80) 42-70% B (0-20 min)
Flow rate	: 0.2 mL/min
Temperature	: 35 °C
Detection	: A) UV at 269 nm B) ESI negative-mode
Injection	: 5 $\mu$ L (5 nmol/mL)

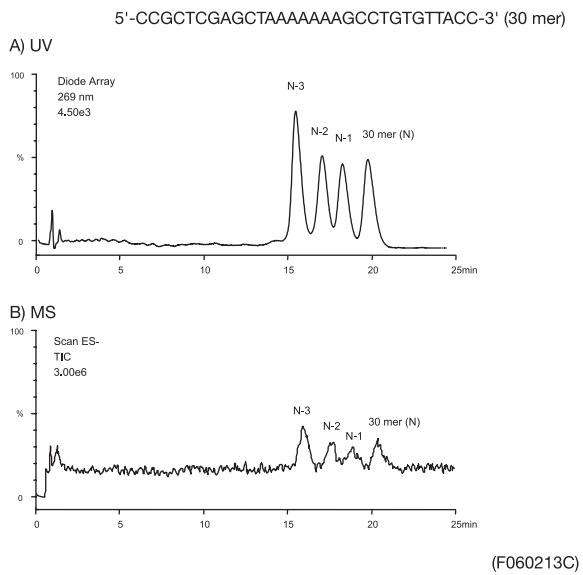
合成オリゴヌクレオチド  
Synthetic oligonucleotides

5'-CCCGTGTTCCTTGCCACAGAC-3' (21 mer)

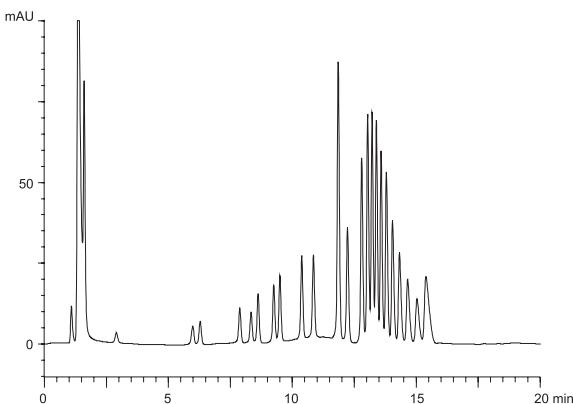


(F050502A)

Column	: Hydrosphere C18 (3 $\mu$ m, 12 nm) 50 $\times$ 4.6 mm I.D.
Eluent	: A) 10 mM di-n-butylamine-acetic acid (pH 6.0) B) 10 mM di-n-butylamine-acetic acid (pH 6.0)/methanol (20/80) 55-60% B (0-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 35 °C
Detection	: UV at 269 nm
Injection	: 3 $\mu$ L (10 nmol/mL)
Sample	: primer of DNA sequencing

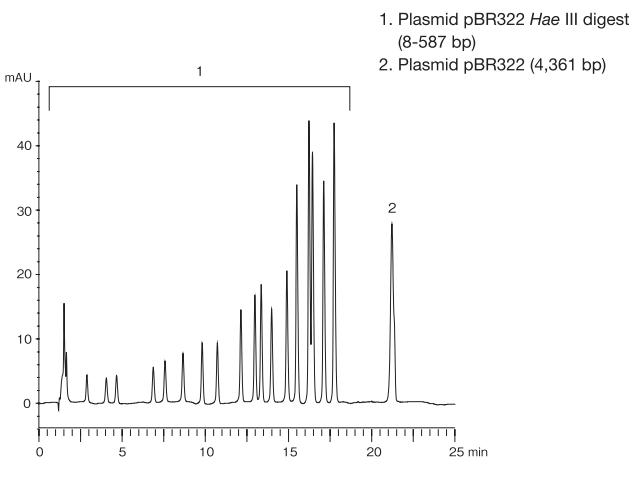
合成オリゴヌクレオチドの LC/MS 分析  
LC/MS analysis of synthetic oligonucleotides

Column	: Hydrosphere C18 (3 μm, 12 nm) 50 × 2.0 mm I.D.
Eluent	: A) 10 mM di-n-butylamine-acetic acid (pH 6.0) B) 10 mM di-n-butylamine-acetic acid (pH 6.0)/acetonitrile (50/50) 58-62% B (0-20 min), 62% B (20-25 min)
Flow rate	: 0.2 mL/min
Temperature	: 35 °C
Detection	: A) UV at 269 nm B) ESI negative-mode
Injection	: 1 μL (10 nmol/mL)
Sample	: primer of DNA sequencing

DNA フラグメント  
DNA fragments

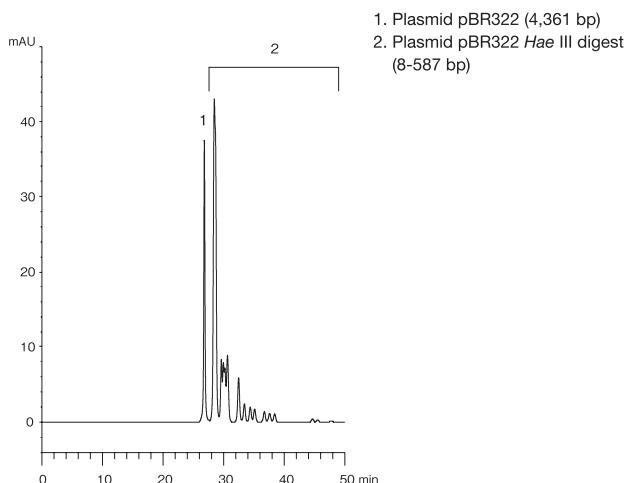
(N080212G)

Column	: YMC-BioPro QA-F (5 μm) 100 × 4.6 mm I.D.
Eluent	: A) 20 mM Tris-HCl (pH 8.1) containing 0.5 M NaCl B) 20 mM Tris-HCl (pH 8.1) containing 1.0 M NaCl 40-100% B (0-30 min)
Flow rate	: 0.5 mL/min
Temperature	: 25 °C
Detection	: UV at 260 nm
Injection	: 20 μL (0.25 mg/mL)
Sample	: 1 kb DNA ladder (75-12,216 bp)

プラミスド pBR322 とその制限酵素 Hae III 分解物  
Plasmid pBR322 and pBR322 Hae III restriction fragments

(N080610F)

Column	: YMC-BioPro QA-F (5 μm) 100 × 4.6 mm I.D.
Eluent	: A) 20 mM Tris-HCl (pH 8.1) B) 20 mM Tris-HCl (pH 8.1) containing 1.0 M NaCl 70-85% B (0-20 min), 85% B (20-25 min)
Flow rate	: 0.5 mL/min
Temperature	: 35 °C
Detection	: UV at 260 nm
Injection	: 10 μL
Sample	: Plasmid pBR322 Hae III digest (0.13 mg/mL) Plasmid pBR322 (0.03 mg/mL)

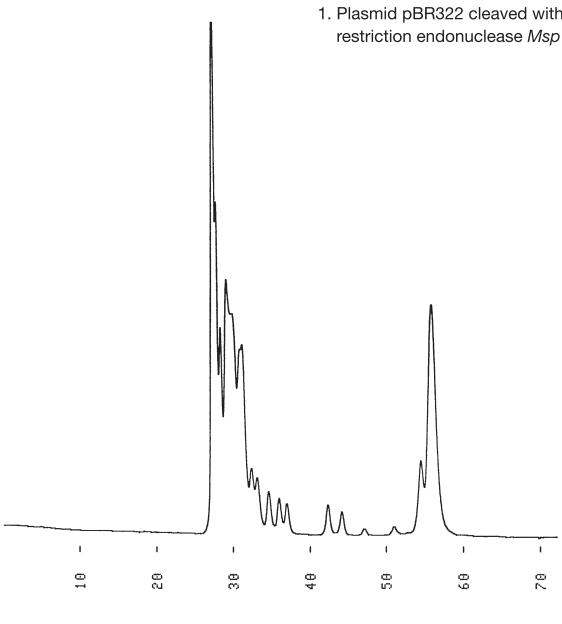
プラミスド pBR322 とその制限酵素 Hae III 分解物  
Plasmid pBR322 and pBR322 Hae III restriction fragments

(P080617A)

Column	: YMC-Pack Diol-300 + Diol-200 500 × 8.0 mm I.D. × 2
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.7 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 260 nm
Injection	: 10 μL
Sample	: Plasmid pBR322 (0.03 mg/mL) Plasmid pBR322 Hae III digest (0.13 mg/mL)

プラスミド pBR322 の制限酵素 *Msp* I 分解物  
Plasmid pBR322 restriction fragments

1. Plasmid pBR322 cleaved with restriction endonuclease *Msp* I

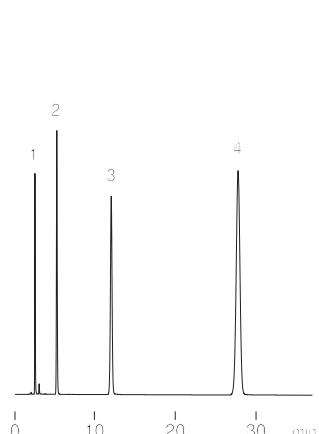


(G920109B)

Column	: YMC-Pack Diol-300 + Diol-200 500 × 8.0 mm I.D. × 2
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.7 mL/min
Temperature	: ambient (26 °C)
Detection	: UV at 260 nm, 0.01 AUFS
Injection	: 3 μL (0.49 mg/mL)
Sample	: Plasmid pBR322 cleaved with restriction endonuclease <i>Msp</i> I

# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

## アミノ酸 Amino acids

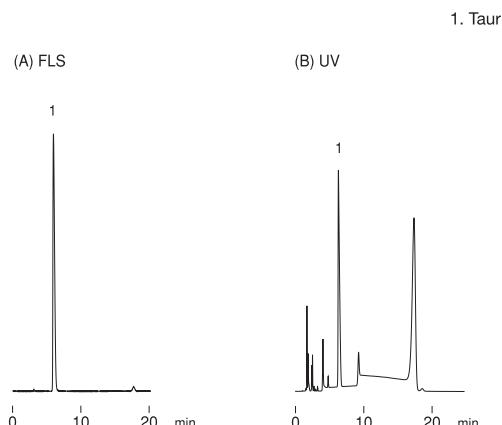


1. L-Valine
2. L-Tyrosine
3. L-Phenylalanine
4. L-Tryptophan

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub>
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 210 nm, 0.16 AUFS
Injection	: 5 $\mu$ L (0.05 ~ 1.6 mg/mL)

(A000419B)

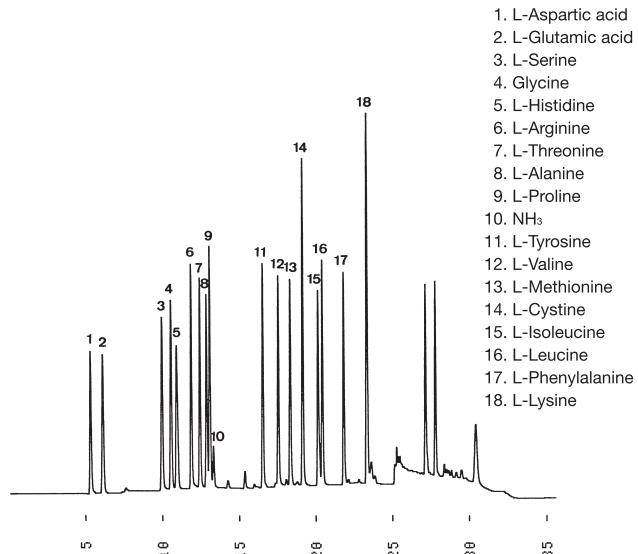
## 市販ドリンク剤中のタウリン Taurine in nutritive drink



(F001115C)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 10 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.8)/acetonitrile (85/15)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: (A) FLS at Ex 345 nm, Em 450 nm (B) UV at 254 nm, 0.32 AUFS
Injection	: 15 $\mu$ L
Sample	: OPA derivative

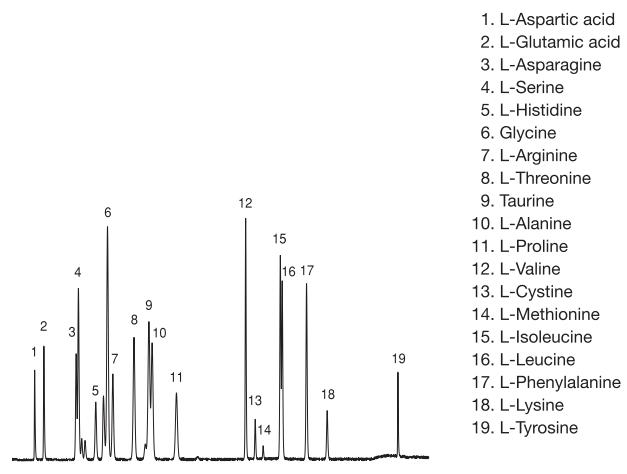
## PTC-アミノ酸 PTC-amino acids



# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

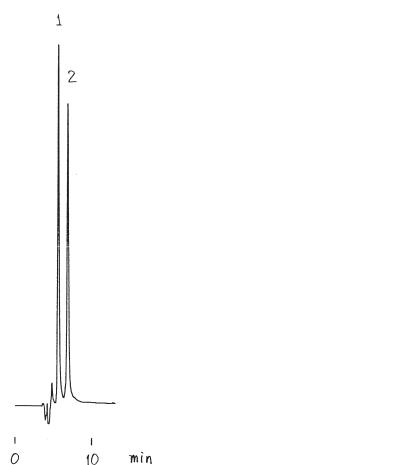
### NBD-アミノ酸 NBD-amino acids



1. L-Aspartic acid
2. L-Glutamic acid
3. L-Asparagine
4. L-Serine
5. L-Histidine
6. Glycine
7. L-Arginine
8. L-Threonine
9. Taurine
10. L-Alanine
11. L-Proline
12. L-Valine
13. L-Cysteine
14. L-Methionine
15. L-Isoleucine
16. L-Leucine
17. L-Phenylalanine
18. L-Lysine
19. L-Tyrosine

(F001129E)

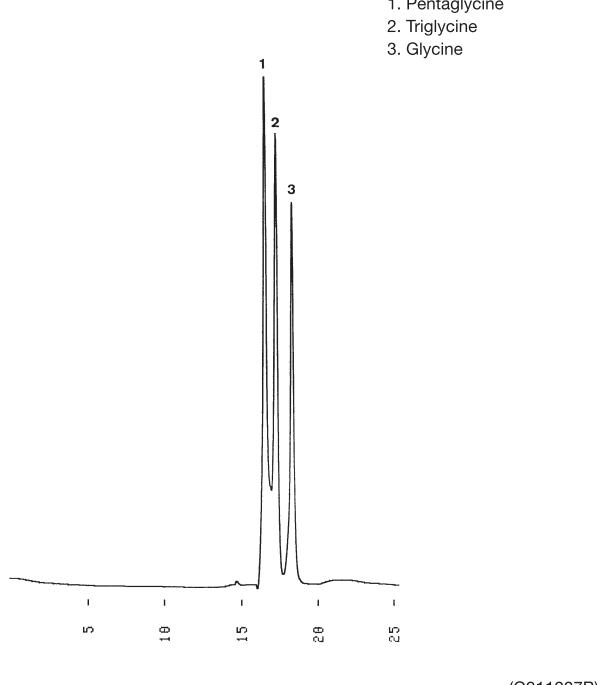
Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.5) B) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.5)/acetonitrile (50/50) 15-25% B (0-25 min), 25-40% B (25-30 min), 40-65% B (30-50 min), 65-100% B (50-55 min), 100% B (55-60 min)
Flow rate	: 1.0 mL/min (0-25 min), 1.5 mL/min (25-60 min)
Temperature	: 30 °C
Detection	: FLS at Ex 470 nm, Em 530 nm
Injection	: 20 $\mu$ L
Sample	: NBD derivatives



1. Glutathione (GSH)
2. Glutathione disulfide (GSSG)

(H900710D)

### グリシンオリゴマー Glycine oligomers

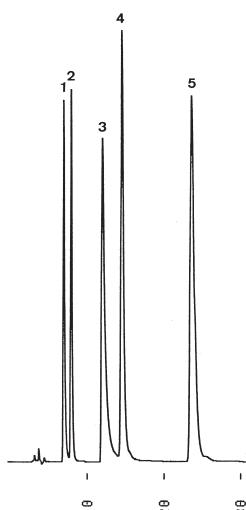


1. Pentaglycine
2. Triglycine
3. Glycine

(G911227B)

Column	: YMC-Pack Diol-60 500 $\times$ 8.0 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0)/acetonitrile (70/30)
Flow rate	: 1.0 mL/min
Temperature	: ambient (24 °C)
Detection	: UV at 215 nm, 0.08 AUFS
Injection	: 20 $\mu$ L (0.25 $\sim$ 2.5 mg/mL)

### アンジオテンシン Angiotensins



1. Angiotensin III
2. Angiotensin II
3. [Asn<sup>1</sup>, Val<sup>5</sup>]-Angiotensin I
4. [Val<sup>5</sup>]-Angiotensin I
5. Angiotensin I

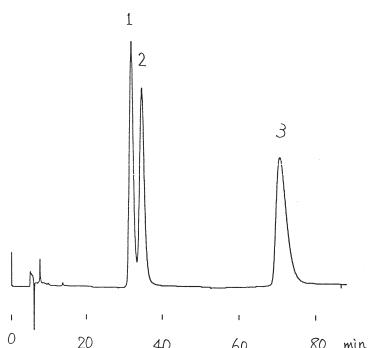
(G910520A)

Column	: YMC-Pack ODS-AM (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: acetonitrile/20 mM KH <sub>2</sub> PO <sub>4</sub> (20/80)
Flow rate	: 0.5 mL/min
Temperature	: 30 °C
Detection	: UV at 220 nm, 0.08 AUFS
Injection	: 8 $\mu$ L (0.05 $\sim$ 0.15 mg/mL)

# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

## アンジオテンシン Angiotensins

1. Angiotensin III
2. Angiotensin II
3. Angiotensin I

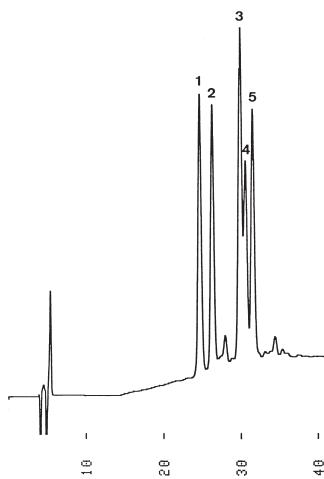


(H900723B)

Column : YMC-Pack PolymerC18  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (18/82/0.05)  
Flow rate : 0.5 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.08 AUFS  
Injection : 10 μL

## インスリン Insulins

1. Insulin (Bovine)
2. Insulin (Sheep)
3. Insulin (Human)
4. Insulin (Equine)
5. Insulin (Porcine)

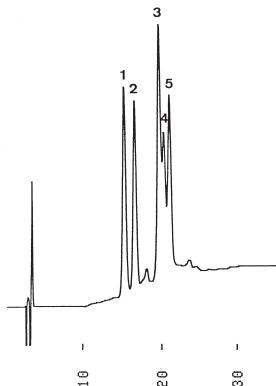


(G910522C)

Column : YMC-Pack ODS-AM (5 μm, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : A) acetonitrile/water/TFA (30/70/0.1)  
B) acetonitrile/water/TFA (32/68/0.1)  
0% B (0-3 min), 0-100% B (3-25 min, linear), 100% B (25-40 min)  
Flow rate : 0.6 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.16 AUFS  
Injection : 15 μL (0.2 mg/mL)

## インスリン Insulins

1. Insulin (Bovine)
2. Insulin (Sheep)
3. Insulin (Human)
4. Insulin (Equine)
5. Insulin (Porcine)

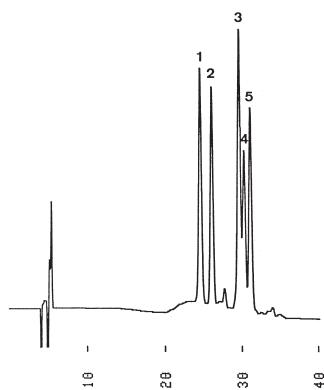


(G910522B)

Column : YMC-Pack ODS-AM (5 μm, 12 nm)  
150 × 6.0 mm I.D.  
Eluent : A) acetonitrile/water/TFA (30/70/0.1)  
B) acetonitrile/water/TFA (32/68/0.1)  
0% B (0-3 min), 0-100% B (3-25 min, linear), 100% B (25-40 min)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.16 AUFS  
Injection : 15 μL (0.2 mg/mL)

## インスリン Insulins

1. Insulin (Bovine)
2. Insulin (Sheep)
3. Insulin (Human)
4. Insulin (Equine)
5. Insulin (Porcine)



(G910522A)

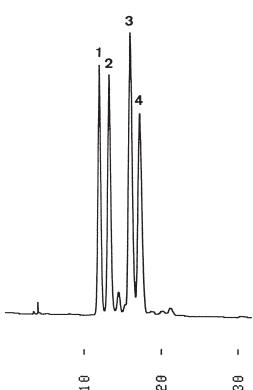
Column : YMC-Pack ODS-AM (5 μm, 12 nm)  
250 × 6.0 mm I.D.  
Eluent : A) acetonitrile/water/TFA (30/70/0.1)  
B) acetonitrile/water/TFA (32/68/0.1)  
0% B (0-3 min), 0-100% B (3-25 min, linear), 100% B (25-40 min)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.16 AUFS  
Injection : 15 μL (0.2 mg/mL)

# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

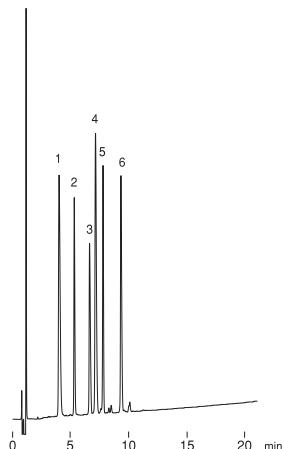
### インスリン Insulins

1. Insulin (Bovine)
2. Insulin (Sheep)
3. Insulin (Human)
4. Insulin (Porcine)



### ペプチド Peptides

1. Bradykinin
2. Dynorphin A (Human, 1-13)
3. Eleloisin related peptide
4. Neurotensin
5. Bombesin
6. Substance P



(G910522D)

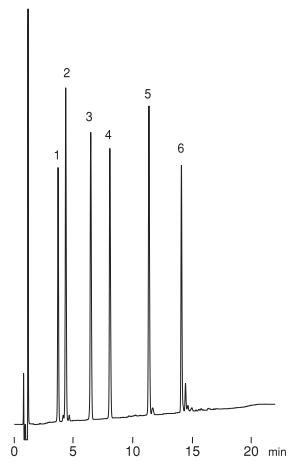
(A980827D)

Column	: YMC-Pack ODS-AM (5 $\mu$ m, 12 nm) 150 $\times$ 6.0 mm I.D.
Eluent	: A) acetonitrile/0.01 N HCl (28/72) B) acetonitrile/0.01 N HCl (35/65) 0-100% B (0-60 min, linear)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 220 nm, 0.16 AUFS
Injection	: 15 $\mu$ L (0.25 mg/mL)

Column	: YMC-Pack Pro C18 (3 $\mu$ m, 12 nm) 75 $\times$ 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 20-40% B (0-20 min, linear)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm, 0.32 AUFS
Injection	: 15 $\mu$ L (0.05 ~ 0.15 mg/mL)

### ペプチド Peptides

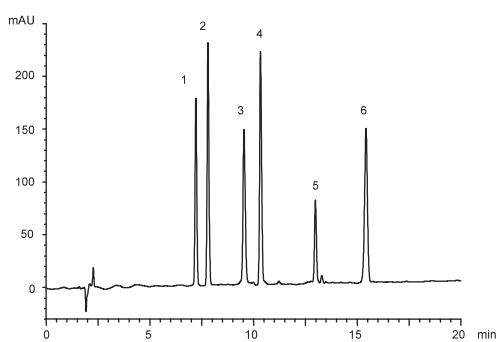
1. Oxytocin
2. Met-Enkephalin
3. Leu-Enkephalin
4. Angiotensin I
5.  $\alpha$ -Mating factor
6. Insulin



(A980827C)

### ペプチド (MW 556 - 3,465) Peptides (MW 556 - 3,465)

1. Oxytocin (MW 1,007)
2. Met-Enkephalin (MW 574)
3. Neurotensin (MW 1,673)
4. Leu-Enkephalin (MW 556)
5.  $\gamma$ -Endorphin (MW 1,859)
6.  $\beta$ -Endorphin (Human) (MW 3,465)



(N041021C)

Column	: YMC-Pack Pro C18 (3 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 20-40% B (0-20 min, linear)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm, 0.32 AUFS
Injection	: 15 $\mu$ L (0.04 ~ 0.15 mg/mL)

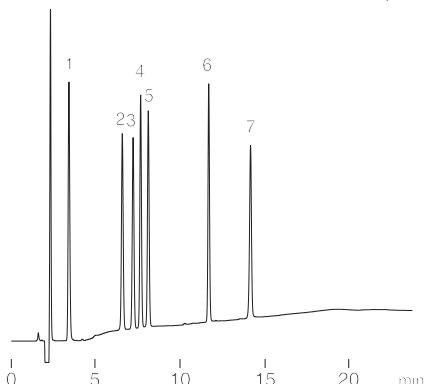
Column	: YMC-Pack Pro C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.05) B) acetonitrile/TFA (100/0.05) 20-40% B (0-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm
Injection	: 10 $\mu$ L (0.075 ~ 0.25 mg/mL)

# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

### ペプチド Peptides

1. BAM-12P
2. [D-Ala<sup>2</sup>, Met<sup>5</sup>]-Enkephalinamide
3.  $\alpha$ -Endorphin
4. Met-Enkephalin
5. [D-Ala<sup>2</sup>, Met<sup>5</sup>]-Enkephalin
6.  $\gamma$ -Endorphin
7.  $\beta$ -Endorphin (Human)

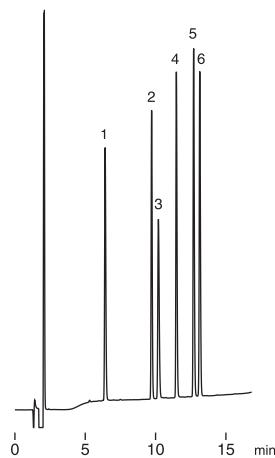


(A000308B)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 20-40% B (0-15 min, linear), 40% B (15-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm, 0.256 AUFS
Injection	: 10 $\mu$ L (0.05 ~ 0.1 mg/mL)

### ペプチド Peptides

1. [Arg<sup>8</sup>]-Vasopressin
2. Oxytocin
3. Bradykinin
4. Angiotensin II
5. Leu-Enkephalin
6. Angiotensin I

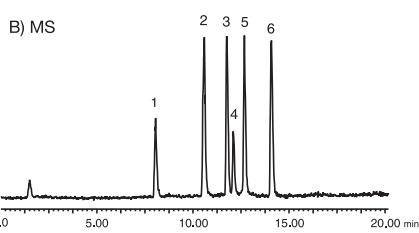
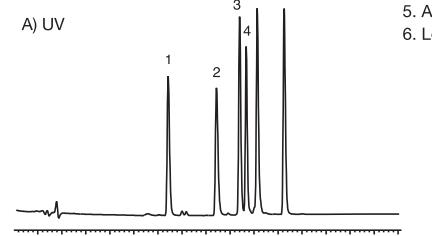


(A010821A)

Column	: YMC-Pack Pro C18 RS (5 $\mu$ m, 8 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 15-35% B (0-15 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm, 0.32 AUFS
Injection	: 20 $\mu$ L (0.05 mg/mL)

### ペプチド - LC/MS Peptides - LC/MS

1. [Arg<sup>8</sup>]-Vasopressin
2. Bradykinin
3. Angiotensin II
4. Oxytocin
5. Angiotensin I
6. Leu-Enkephalin

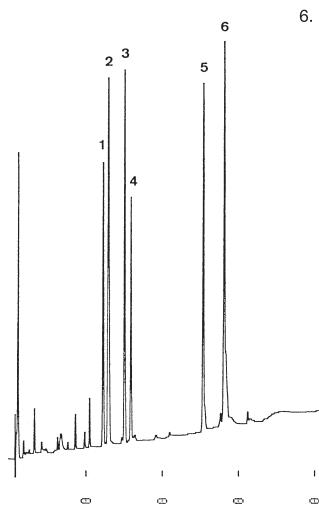


(A020808A)

Column	: YMC-Pack Pro C18 RS (5 $\mu$ m, 8 nm) 150 $\times$ 2.0 mm I.D.
Eluent	: A) water/TFA (100/0.01) B) acetonitrile/TFA (100/0.01) 10-35% B (0-15 min), 35% B (15-20 min)
Flow rate	: 0.2 mL/min
Temperature	: 37 °C
Detection	: A) UV at 220 nm, B) ESI positive-mode
Injection	: 4 $\mu$ L (0.05 mg/mL)

### ペプチド Peptides

1. Met-Enkephalin
2. Bradykinin
3. Angiotensin II
4. Leu-Enkephalin
5. CCK-Octapeptide
6. Insulin Chain B



(S930909D)

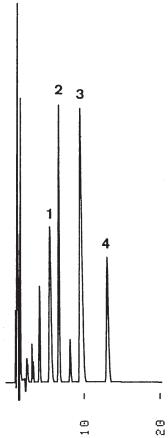
Column	: J'sphere ODS-H80 (4 $\mu$ m, 8 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) acetonitrile/water/TFA (5/95/0.1) B) acetonitrile/water/TFA (40/60/0.1) 20-100% B (0-40 min, linear)
Flow rate	: 1.5 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm, 0.26 AUFS
Injection	: 40 $\mu$ L (0.067 ~ 0.13 mg/mL)

# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

### ペプチド Peptides

1. Bradykinin
2. Met-Enkephalin
3. Angiotensin III
4. Leu-Enkephalin

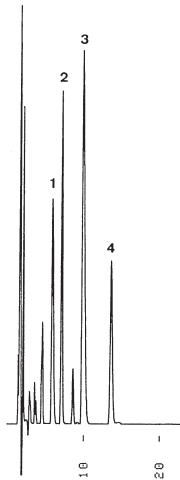


(O940804D)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/water/TFA (20/80/0.1)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 220 nm, 0.32 AUFS  
 Injection : 20  $\mu$ L (34 ~ 65  $\mu$ g/mL)

### ペプチド Peptides

1. Bradykinin
2. Met-Enkephalin
3. Angiotensin III
4. Leu-Enkephalin

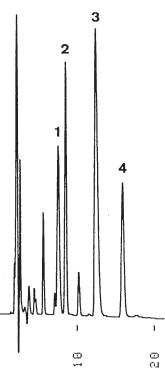


(O940804A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
 150  $\times$  2.0 mm I.D.  
 Eluent : acetonitrile/water/TFA (20/80/0.1)  
 Flow rate : 0.2 mL/min  
 Temperature : 37 °C  
 Detection : UV at 220 nm, 0.08 AUFS  
 Injection : 4  $\mu$ L (34 ~ 65  $\mu$ g/mL)

### ペプチド Peptides

1. Bradykinin
2. Met-Enkephalin
3. Angiotensin III
4. Leu-Enkephalin

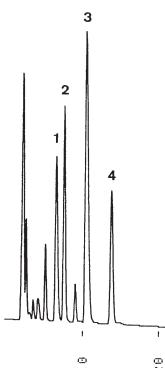


(O940804B)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
 150  $\times$  1.5 mm I.D.  
 Eluent : acetonitrile/water/TFA (20/80/0.1)  
 Flow rate : 0.1 mL/min  
 Temperature : 37 °C  
 Detection : UV at 220 nm, 0.08 AUFS  
 Injection : 2  $\mu$ L (34 ~ 65  $\mu$ g/mL)

### ペプチド Peptides

1. Bradykinin
2. Met-Enkephalin
3. Angiotensin III
4. Leu-Enkephalin



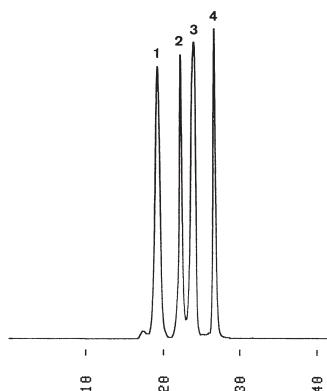
(O940804C)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
 150  $\times$  1.0 mm I.D.  
 Eluent : acetonitrile/water/TFA (20/80/0.1)  
 Flow rate : 0.05 mL/min  
 Temperature : 37 °C  
 Detection : UV at 220 nm, 0.08 AUFS  
 Injection : 1  $\mu$ L (34 ~ 65  $\mu$ g/mL)

# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

## ペプチド Peptides

1. Insulin (Bovine)
2. Neurotensin
3. Angiotensin II
4. Glycine

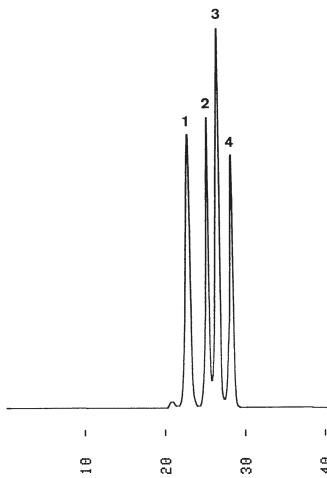


(G911217A)

Column	: YMC-Pack Diol-60 500 × 8.0 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl/acetonitrile (70/30)
Flow rate	: 0.7 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 215 nm, 0.16 AUFS
Injection	: 25 μL (0.07 ~ 5.3 mg/mL)

## ペプチド Peptides

1. Insulin (Bovine)
2. Neurotensin
3. Angiotensin II
4. Glycine

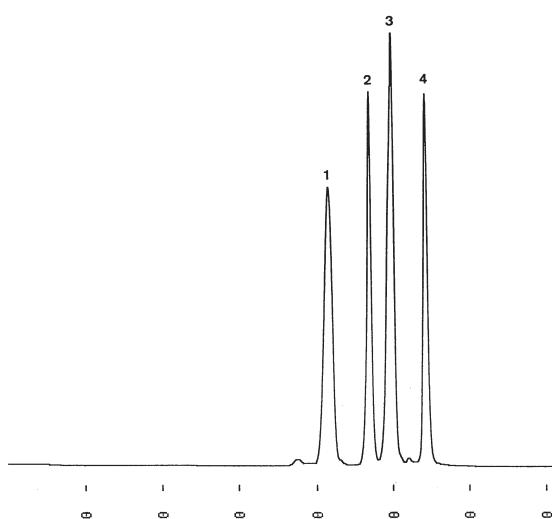


(G911217B)

Column	: YMC-Pack Diol-120 500 × 8.0 mm I.D. × 2
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl/acetonitrile (70/30)
Flow rate	: 0.7 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 215 nm, 0.16 AUFS
Injection	: 25 μL (0.07 ~ 5.3 mg/mL)

## ペプチド Peptides

1. Insulin (Bovine)
2. Neurotensin
3. Angiotensin II
4. Glycine

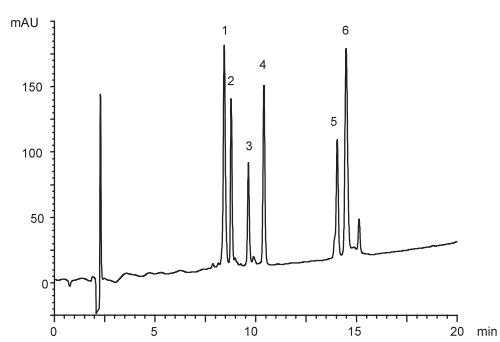


(G911217C)

Column	: YMC-Pack Diol-120 + Diol-60 500 × 8.0 mm I.D. × 2
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl/acetonitrile (70/30)
Flow rate	: 0.7 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 215 nm, 0.08 AUFS
Injection	: 25 μL (0.07 ~ 5.3 mg/mL)

## ペプチドおよびタンパク質 (MW 4,330 - 17,000) Peptides and proteins (MW 4,330 - 17,000)

1. Cytochrome c (Horse heart) (MW 12,400)
2. Insulin (Bovine pancreas) (MW 5,733)
3. Amyloid β-protein (1-40) (MW 4,330)
4. Lysozyme (Chicken egg white) (MW 14,300)
5. α-Lactalbumin (Human milk) (MW 14,100)
6. Myoglobin (Horse skeletal muscle) (MW 17,000)

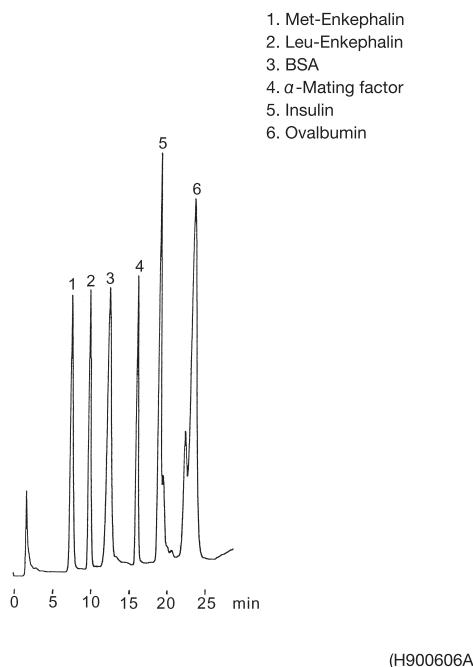


(N040820A)

Column	: YMC-Pack C <sub>8</sub> (5 μm, 20 nm) 150 × 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 25-60% B (0-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm
Injection	: 10 μL (0.1 ~ 0.2 mg/mL)

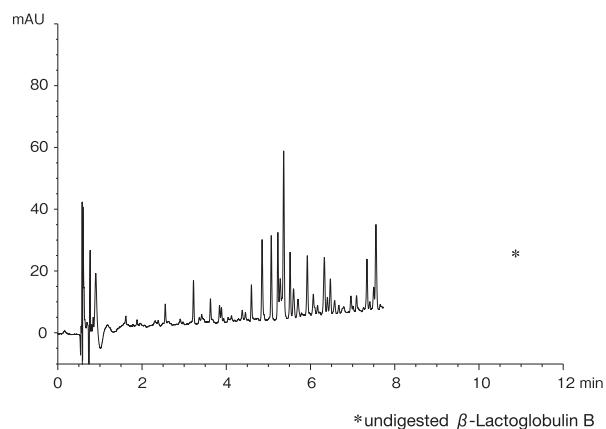
# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

## ペプチドおよびタンパク質 Peptides and proteins



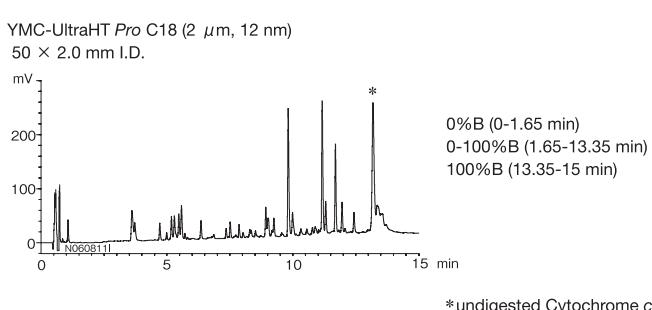
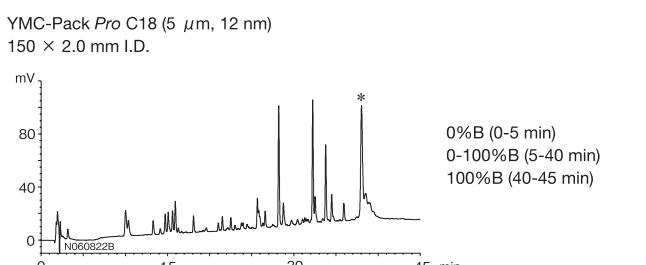
Column : YMC-Pack PolymerC18  
150 × 4.6 mm I.D.  
Eluent : A) acetonitrile/water/TFA (20/80/0.05)  
B) acetonitrile/water/TFA (45/55/0.05)  
0-100% B (0-30 min, linear)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.32 AUFS  
Injection : 30  $\mu$ L

## ペプチドマッピング - 2 $\mu$ m カラムによる高分解能分析 High resolution peptide mapping



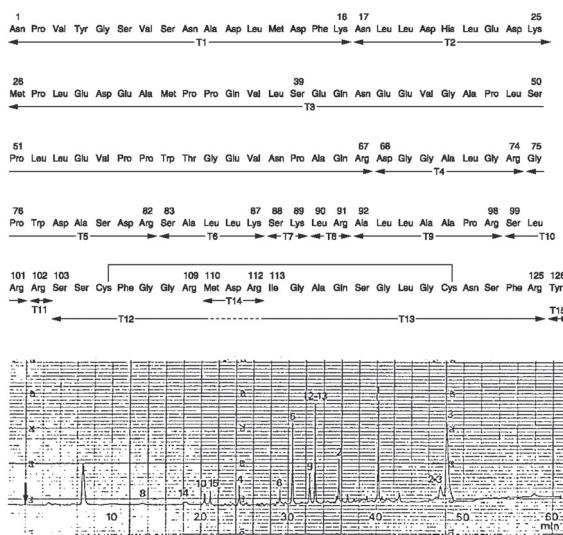
Column : YMC-UltraHT Pro C18 (2  $\mu$ m, 12 nm)  
100 × 2.0 mm I.D.  
Eluent : A) water/TFA (100/0.1)  
B) acetonitrile/TFA (100/0.1)  
5-50% B (0-12 min)  
Flow rate : 0.5 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm  
Injection : 1  $\mu$ L  
Sample : Tryptic digest of  $\beta$ -Lactoglobulin B

## ペプチドマッピング - 粒子間の優れた再現性 Peptide mapping - excellent reproducibility between 5 $\mu$ m and 2 $\mu$ m



Eluent : A) acetonitrile/water/TFA (10/90/0.1)  
B) acetonitrile/water/TFA (35/65/0.1)  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm  
Injection : 1  $\mu$ L  
Sample : Tryptic digest of Cytochrome c

## ペプチドマッピング Peptide mapping

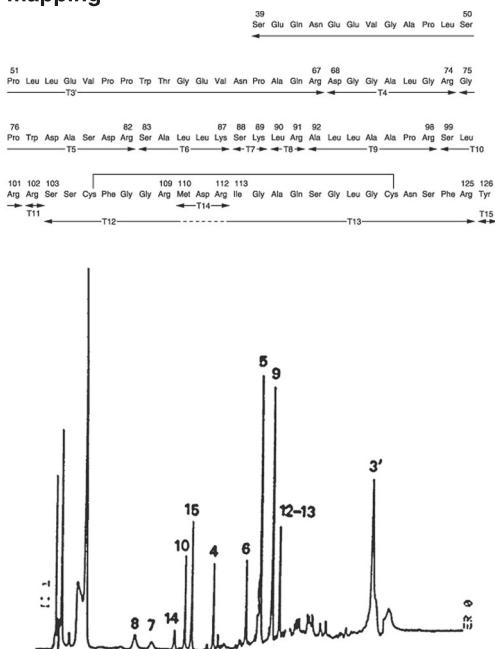


Courtesy of Dr. Nohihara, GBF-Gesellschaft für Biotechnologische Forschung (Y890712B)

Column : YMC-Pack ODS/R (5  $\mu$ m, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : A) 0.01 N HCl  
B) acetonitrile  
0% B (0 min), 0% B (10 min), 50% B (60 min, linear)  
Flow rate : 1.0 mL/min  
Detection : UV at 210 nm  
Sample : Tryptic digests of synthetic pCDD 126

# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

## ペプチドマッピング Peptide mapping

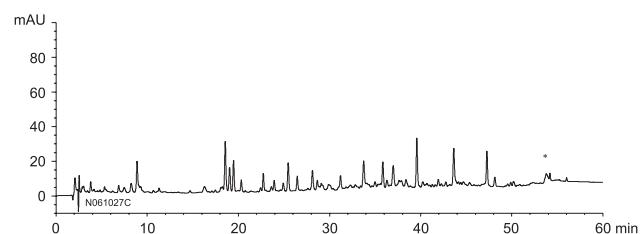


Courtesy of Dr. Nokihara, GBF-Gesellschaft für Biotechnologische Forschung (Y890712A)

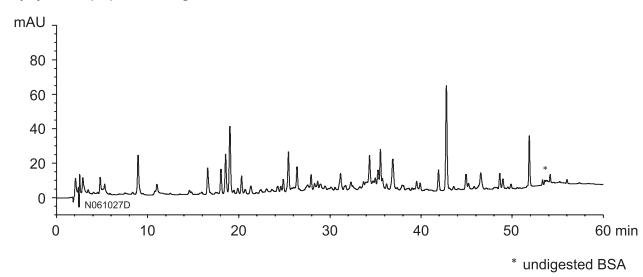
Column	: YMC-Pack ODS/R (5 $\mu$ m, 12 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: A) 0.01 N HCl B) acetonitrile 0% B (0 min), 0% B (10 min), 60% B (60 min, linear)
Flow rate	: 1.0 mL/min
Detection	: UV at 210 nm
Sample	: Tryptic digests of synthetic pCDD 88

## ペプチドマッピング Peptide mapping

Tryptic digest of BSA



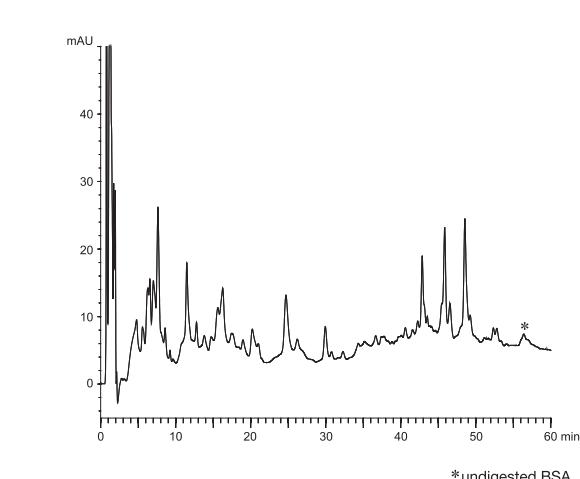
Lysyl endopeptidase digest of BSA



(N070629D)

Column	: YMCbasic (5 $\mu$ m) 150 $\times$ 2.0 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 5-35% B (0-50 min), 35-45% B (50-55 min), 45% B (55-60 min)
Flow rate	: 0.2 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm
Injection	: 1 $\mu$ L

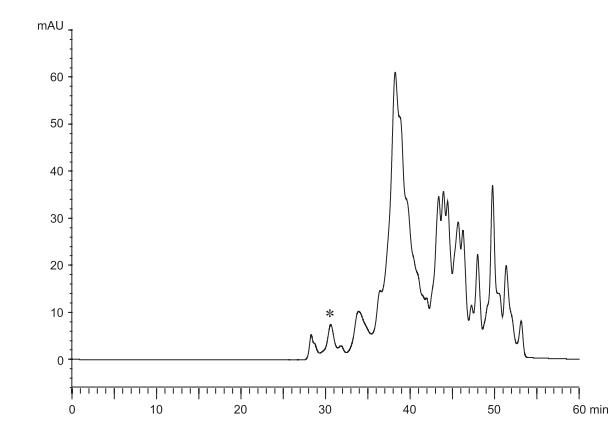
## ペプチドマッピング Peptide mapping



(N080422B)

Column	: YMC-BioPro QA (5 $\mu$ m, 100 nm) 50 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM Tris-HCl (pH 8.6) B) 20 mM Tris-HCl (pH 8.6) containing 0.5 M NaCl 0-15% B (0-30 min), 15-60% B (30-60 min)
Flow rate	: 0.5 mL/min
Temperature	: 25 °C
Detection	: UV at 220 nm
Injection	: 20 $\mu$ L
Sample	: Tryptic digest of BSA

## ペプチドマッピング Peptide mapping



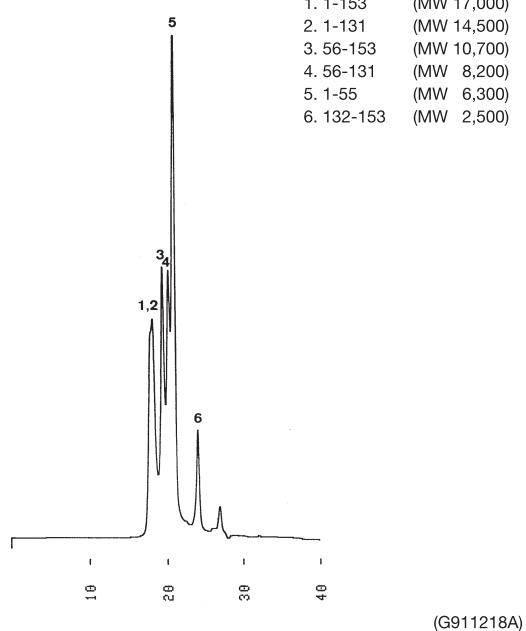
(N080623L)

Column	: YMC-Pack Diol-120 + Diol-60 500 $\times$ 8.0 mm I.D. $\times$ 2
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl/acetonitrile (70/30)
Flow rate	: 0.7 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 220 nm
Injection	: 5 $\mu$ L
Sample	: Tryptic digest of BSA

# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

## ミオグロビン分解物

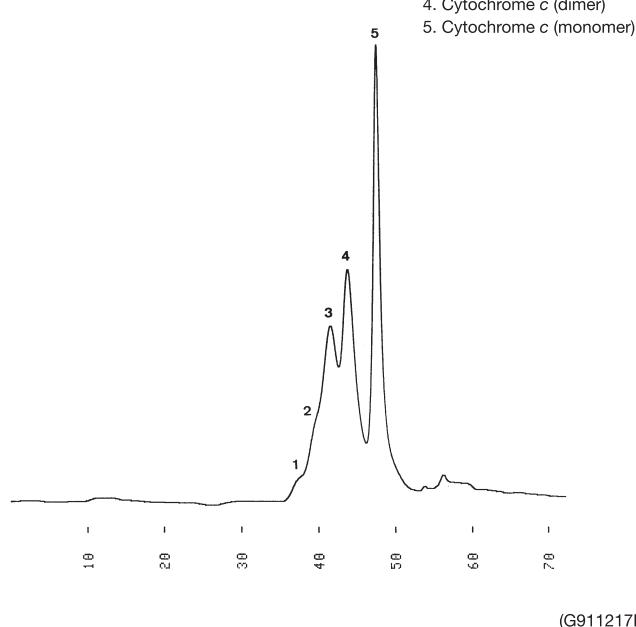
### Peptide fragments from myoglobin



Column : YMC-Pack Diol-120  
500 × 8.0 mm I.D.  
Eluent : 0.1 M KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 7.0) containing 0.2 M NaCl/acetonitrile (70/30)  
Flow rate : 0.7 mL/min  
Temperature : ambient (25 °C)  
Detection : UV at 215 nm, 0.32 AUFS  
Injection : 20 μL (2.0 mg/mL)  
Sample : Cyanogen bromide cleavages of horse heart myoglobin.  
Molecular Weight Marker for proteins, manufactured by Fluka Chemie AG.

## チトクローム c

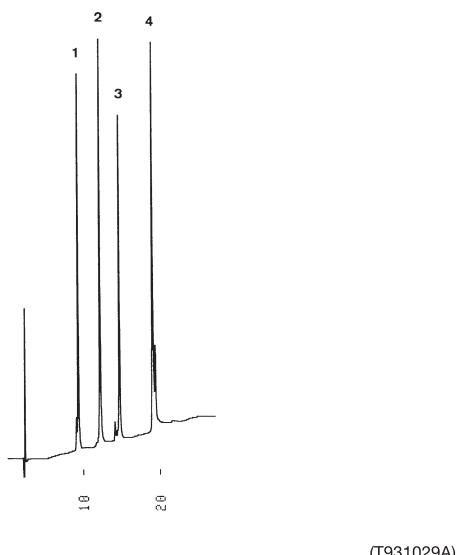
### Cytochrome c



Column : YMC-Pack Diol-200 + Diol-120  
500 × 8.0 mm I.D. × 2  
Eluent : 0.1 M KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 7.0) containing 0.2 M NaCl  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : UV at 215 nm, 0.08 AUFS  
Injection : 30 μL (0.2 mg/mL)

## タンパク質 Proteins

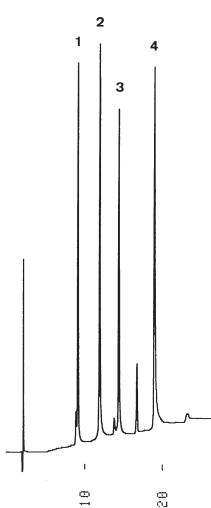
- 1. Ribonuclease A
- 2. Cytochrome c
- 3. Lysozyme
- 4. Myoglobin



Column : YMC-Pack ODS-A (5 μm, 30 nm)  
150 × 4.6 mm I.D.  
Eluent : A) acetonitrile/water/TFA (5/95/0.1)  
B) acetonitrile/water/TFA (60/40/0.1)  
30-90% B (0-20 min, linear), 90% B (20-25 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.32 AUFS  
Injection : 16 μL (0.16 ~ 0.33 mg/mL)

## タンパク質 Proteins

- 1. Ribonuclease A
- 2. Cytochrome c
- 3. Lysozyme
- 4. Myoglobin



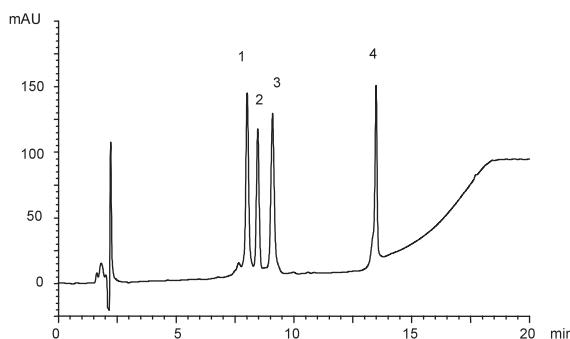
Column : YMC-Pack C<sub>4</sub> (5 μm, 30 nm)  
150 × 4.6 mm I.D.  
Eluent : A) acetonitrile/water/TFA (5/95/0.1)  
B) acetonitrile/water/TFA (60/40/0.1)  
30-90% B (0-20 min, linear), 90% B (20-25 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.32 AUFS  
Injection : 16 μL (0.16 ~ 0.33 mg/mL)

# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

### タンパク質 (MW 18,300 - 45,000) Proteins (MW 18,300 - 45,000)

1.  $\beta$ -Lactoglobulin B (Bovine milk) (MW 18,300)  
 2.  $\beta$ -Lactoglobulin A (Bovine milk) (MW 18,400)  
 3.  $\alpha$ -Chymotrypsinogen A (Bovine pancreas) (MW 25,700)  
 4. Ovalbumin (MW 45,000)

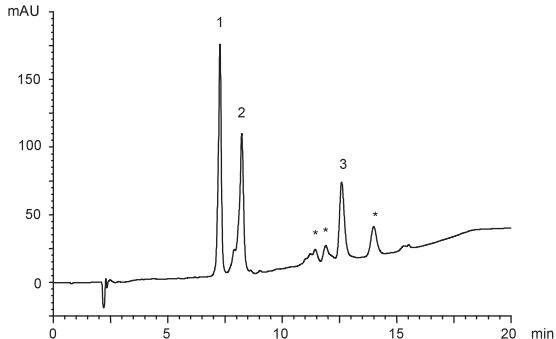


(N041126A)

### タンパク質 (MW 66,000 - 96,000) Proteins (MW 66,000 - 96,000)

1. BSA (MW 66,000)  
 2. Conalbumin (Chicken egg white) (MW 77,000)  
 3. Lipoxidase (Soybean) (MW 96,000)

\* Impurities in commercial lipoxidase



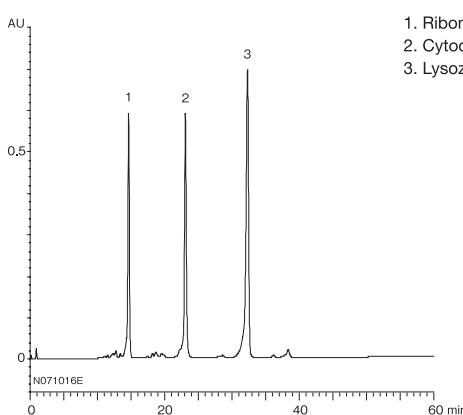
(N040930G)

Column	: YMC-Pack C <sub>4</sub> (5 $\mu$ m, 30 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 40-50% B (0-10 min), 50-90% B (10-15 min), 90% B (15-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm
Injection	: 10 $\mu$ L (0.2 ~ 0.3 mg/mL)

Column	: YMC-Pack C <sub>4</sub> (5 $\mu$ m, 30 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/2-propanol/TFA (50/50/0.1) 30-75% B (0-15 min), 75% B (15-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm
Injection	: 10 $\mu$ L (0.25 ~ 1.0 mg/mL)

### タンパク質 Proteins

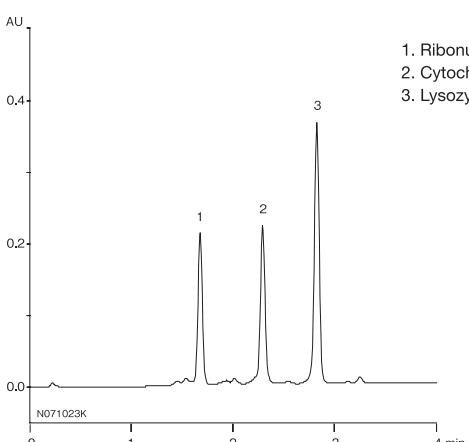
1. Ribonuclease A  
 2. Cytochrome c  
 3. Lysozyme



(N071016E)

### タンパク質 Proteins

1. Ribonuclease A  
 2. Cytochrome c  
 3. Lysozyme



(N071023K)

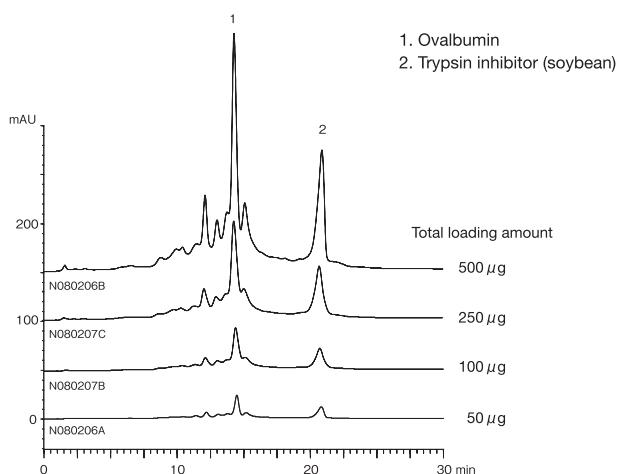
Column	: YMC-BioPro SP (5 $\mu$ m, 100 nm) 50 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.8) B) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.8) containing 0.5 M NaCl 0-100% B (0-60 min)
Flow rate	: 0.5 mL/min
Temperature	: 25 °C
Detection	: UV at 220 nm
Injection	: 20 $\mu$ L (0.5 mg/mL)

Column	: YMC-BioPro SP-F (5 $\mu$ m) 30 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.8) B) 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.8) containing 0.5 M NaCl 0-100% B (0-4 min)
Flow rate	: 1.5 mL/min
Temperature	: 25 °C
Detection	: UV at 220 nm
Injection	: 20 $\mu$ L (0.1 mg/mL)

# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

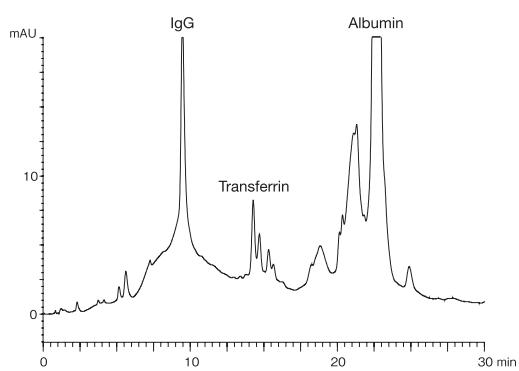
### タンパク質 Proteins



(N080417W)

Column	: YMC-BioPro QA (5 $\mu$ m, 100 nm) 50 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM Tris-HCl (pH 8.1) B) 20 mM Tris-HCl (pH 8.1) containing 0.5 M NaCl 10-80% B (0-30 min)
Flow rate	: 0.5 mL/min
Temperature	: 25 °C
Detection	: UV at 280 nm
Injection	: 100 $\mu$ L

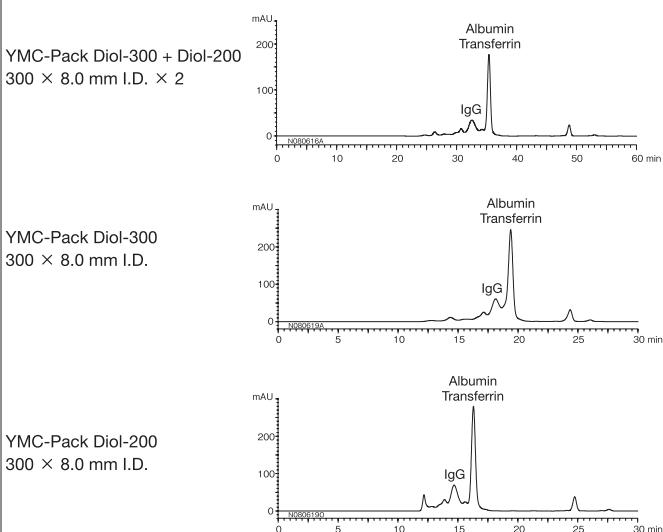
### ヒト血清中のタンパク質 Proteins in human serum



(N080313E)

Column	: YMC-BioPro QA (5 $\mu$ m, 100 nm) 50 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM Tris-HCl (pH 8.6) B) 20 mM Tris-HCl (pH 8.6) containing 0.5 M NaCl 0-30% B (0-15 min), 30-100% B (15-30 min)
Flow rate	: 0.5 mL/min
Temperature	: 25 °C
Detection	: UV at 280 nm
Injection	: 20 $\mu$ L
Sample	: Human serum (100 $\mu$ L/mL)

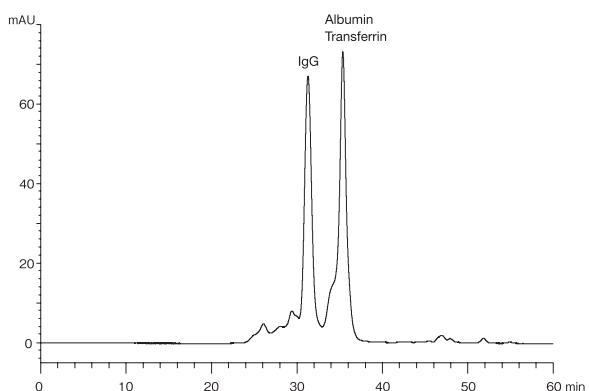
### ヒト血清中のタンパク質 Proteins in human serum



(N080702B)

Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.5 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 280 nm
Injection	: 20 $\mu$ L
Sample	: Human serum (100 $\mu$ L/mL)

### マウス腹水中のタンパク質 Proteins in mouse ascites fluid

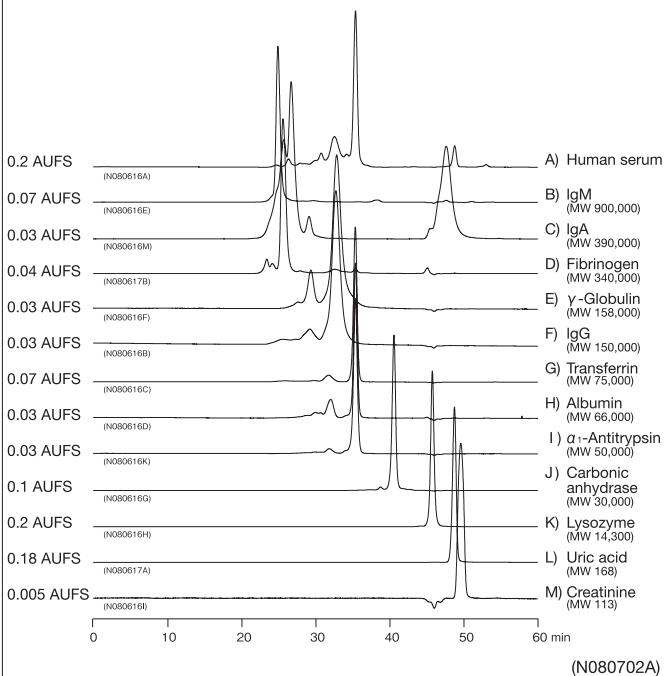


(P080528A)

Column	: YMC-Pack Diol-300 + Diol-200 300 $\times$ 4.6 mm I.D. × 2
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0)
Flow rate	: 0.17 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 220 nm
Injection	: 10 $\mu$ L (60 times dilution with water)

# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

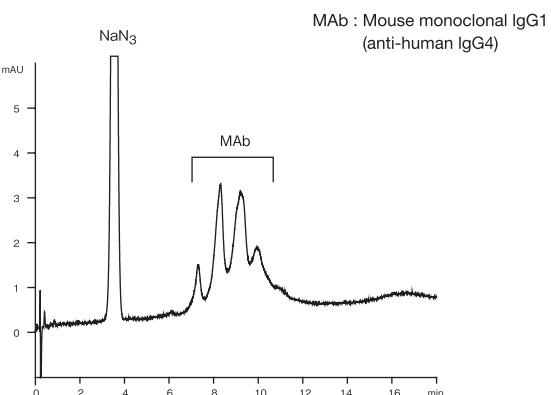
## 血漿成分 Plasma constituents



(N080702A)

Column	: YMC-Pack Diol-300 + Diol-200 300 × 8.0 mm I.D. × 2
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.5 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 280 nm
Injection	: 20 μL (L : 1 μL)
Sample	: A) 100 μL/mL B-M) 1.0 mg/mL

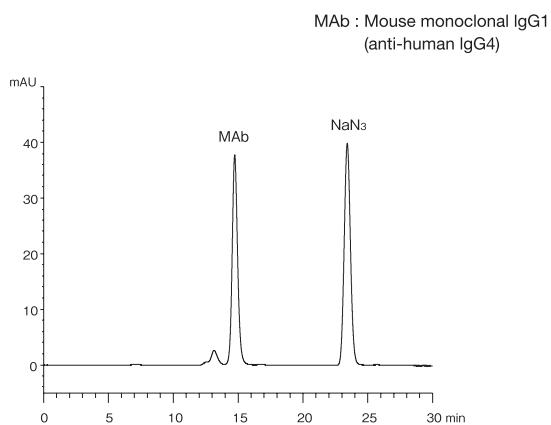
## モノクローナル抗体 Monoclonal antibody (MAb)



(P080220A)

Column	: YMC-BioPro QA-F (5 μm) 30 × 4.6 mm I.D.
Eluent	: A) 20 mM Tris-HCl (pH 8.1) B) 20 mM Tris-HCl (pH 8.1) containing 0.5 M NaCl 10-25% B (0-18 min)
Flow rate	: 1.0 mL/min
Temperature	: 25 °C
Detection	: UV at 220 nm
Injection	: 10 μL
Sample	: a commercially available mouse monoclonal IgG1 (0.1 mg/mL) (purified by DEAE chromatography, containing NaN <sub>3</sub> )

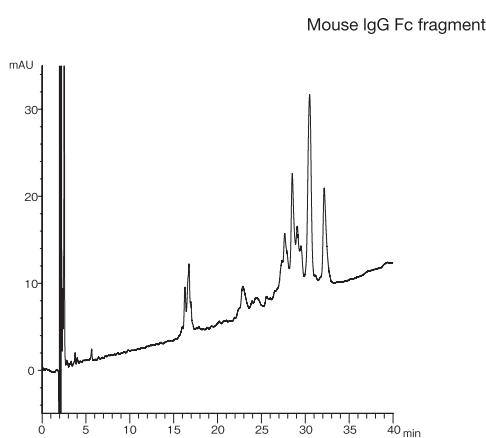
## モノクローナル抗体 Monoclonal antibody (MAb)



(P080530A)

Column	: YMC-Pack Diol-200 300 × 4.6 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0)
Flow rate	: 0.17 mL/min
Temperature	: ambient (25 °C)
Detection	: UV at 220 nm
Injection	: 10 μL
Sample	: a commercially available mouse monoclonal IgG1 (0.05 mg/mL) (purified by DEAE chromatography, containing NaN <sub>3</sub> )

## マウス IgG Fc フラグメント Mouse IgG Fc fragment



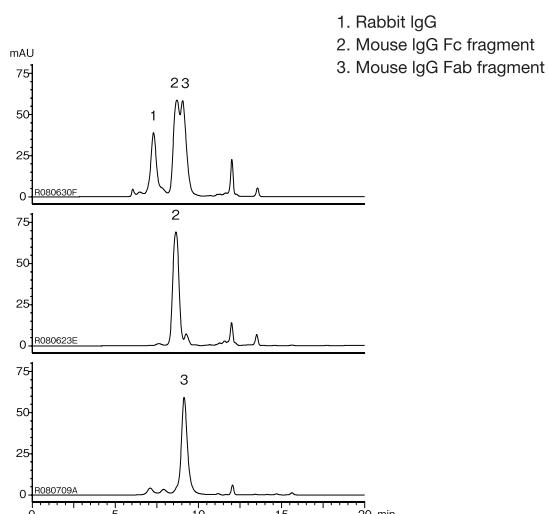
(R080619B)

Column	: YMC-Pack C <sub>4</sub> (5 μm, 30 nm) 150 × 4.6 mm I.D.
Eluent	: A) water/TFA (100/0.1) B) acetonitrile/TFA (100/0.1) 25-45% B (0-40 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm
Injection	: 5 μL (1.0 mg/mL)
Sample	: Mouse IgG Fc fragment, manufactured by Rockland Inc. Prepared from normal serum by a multi-step process which includes delipidation, salt fractionation, ion exchange chromatography and papain digestion followed by chromatographic separation and extensive dialysis against the buffer stated above

# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

### 免役グロブリン (IgG) および IgG フラグメント IgG, Fab and Fc fragments

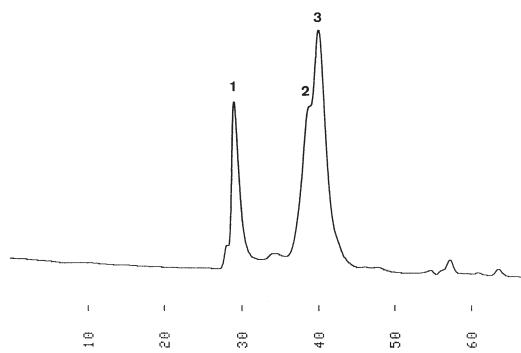


Column	: YMC-Pack Diol-200 300 × 8.0 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.9) containing 0.2 M NaCl
Flow rate	: 1.0 mL/min
Temperature	: ambient (27 °C)
Detection	: UV at 220 nm
Injection	: 5 μL (0.4, 0.5 mg/mL)

(R080708A)

### ヒト免疫グロブリン Human immunoglobulins

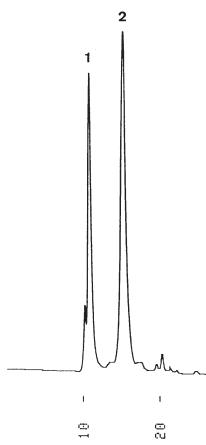
1. Human IgM ( $\kappa$ ), myeloma protein
2. Normal human IgA
3. Normal human IgG



(G920108G)

### ヒト免疫グロブリン Human immunoglobulins

1. Human IgM ( $\kappa$ ), myeloma protein
2. Normal human IgG

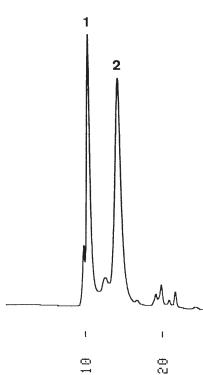


(G920108F)

Column	: YMC-Pack Diol-300 500 × 8.0 mm I.D.
Eluent	: 0.1 M NaH <sub>2</sub> PO <sub>4</sub> -Na <sub>2</sub> HPO <sub>4</sub> (pH 6.8) containing 0.1 M Na <sub>2</sub> SO <sub>4</sub>
Flow rate	: 1.0 mL/min
Temperature	: ambient (24 °C)
Detection	: UV at 280 nm, 0.04 AUFS
Injection	: 40 μL (0.5 mg/mL)

### ヒト免疫グロブリン Human immunoglobulins

1. Human IgM ( $\kappa$ ), myeloma protein
2. Normal human IgA



(G920108E)

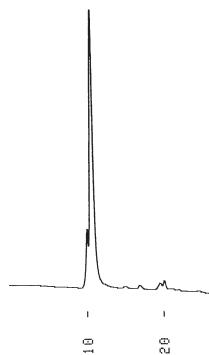
Column	: YMC-Pack Diol-300 500 × 8.0 mm I.D.
Eluent	: 0.1 M NaH <sub>2</sub> PO <sub>4</sub> -Na <sub>2</sub> HPO <sub>4</sub> (pH 6.8) containing 0.1 M Na <sub>2</sub> SO <sub>4</sub>
Flow rate	: 1.0 mL/min
Temperature	: ambient (24 °C)
Detection	: UV at 280 nm, 0.04 AUFS
Injection	: 40 μL (0.5 mg/mL)

# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

### ヒト免疫グロブリン (IgM $\kappa$ 鎖, ミエローマタンパク質) Human IgM ( $\kappa$ ), myeloma protein

1. Normal human IgM ( $\kappa$ ), myeloma protein

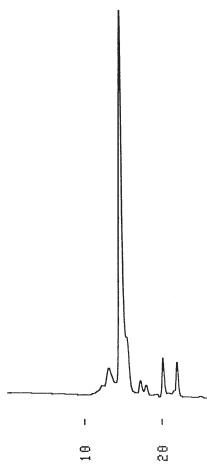


(G920108D)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : 0.1 M NaH<sub>2</sub>PO<sub>4</sub>-Na<sub>2</sub>HPO<sub>4</sub> (pH 6.8) containing 0.1 M Na<sub>2</sub>SO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : UV at 280 nm, 0.04 AUFS  
Injection : 20  $\mu$ L (1.0 mg/mL)

### ヒト免疫グロブリン (IgG $\lambda$ 鎖, ミエローマタンパク質) Human IgG ( $\lambda$ ), myeloma protein

1. Human IgG ( $\lambda$ ), myeloma protein

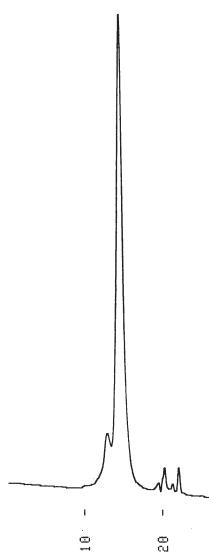


(G920108B)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : 0.1 M NaH<sub>2</sub>PO<sub>4</sub>-Na<sub>2</sub>HPO<sub>4</sub> (pH 6.8) containing 0.1 M Na<sub>2</sub>SO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : UV at 280 nm, 0.04 AUFS  
Injection : 20  $\mu$ L (1.0 mg/mL)

### ヒト免疫グロブリン (IgA) Normal human IgA

1. Normal human IgA

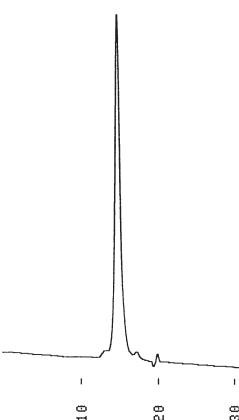


(G920108C)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : 0.1 M NaH<sub>2</sub>PO<sub>4</sub>-Na<sub>2</sub>HPO<sub>4</sub> (pH 6.8) containing 0.1 M Na<sub>2</sub>SO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : UV at 280 nm, 0.02 AUFS  
Injection : 20  $\mu$ L (1.0 mg/mL)

### ヒト免疫グロブリン (IgG) Normal human IgG

1. Normal human IgG



(G920108A)

Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : 0.1 M NaH<sub>2</sub>PO<sub>4</sub>-Na<sub>2</sub>HPO<sub>4</sub> (pH 6.8) containing 0.1 M Na<sub>2</sub>SO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : ambient (24 °C)  
Detection : UV at 280 nm, 0.04 AUFS  
Injection : 20  $\mu$ L (1.0 mg/mL)

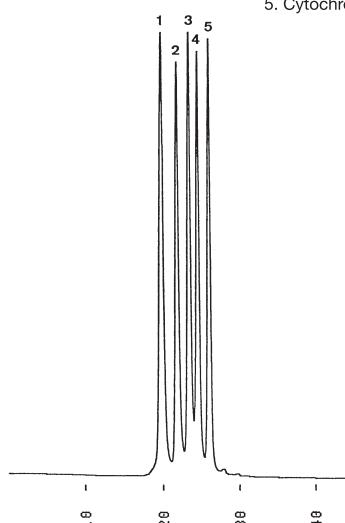
# 4 アミノ酸、ペプチド、タンパク質

## Amino acids, Peptides, Proteins

### タンパク分子量マーカー

#### Proteins for molecular weight marker

1. Glutamate dehydrogenase (MW 290,000)
2. Lactate dehydrogenase (MW 142,000)
3. Enolase (MW 67,000)
4. Adenylate kinase (MW 32,000)
5. Cytochrome c (MW 12,400)



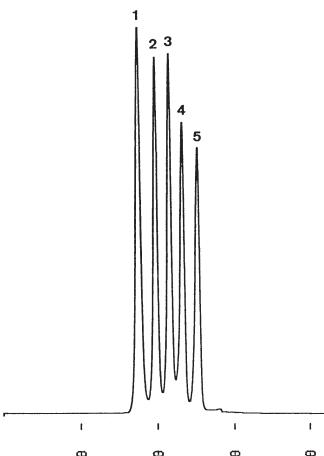
(G911213A)

Column	: YMC-Pack Diol-300 500 × 8.0 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.7 mL/min
Temperature	: ambient (26 °C)
Detection	: UV at 280 nm, 0.08 AUFS
Injection	: 15 μL (100 μL/1 vial)
Sample	: MW-Marker (HPLC), manufactured by ORIENTAL YEAST CO., LTD.

### タンパク分子量マーカー

#### Proteins for molecular weight marker

1. Glutamate dehydrogenase (MW 290,000)
2. Lactate dehydrogenase (MW 142,000)
3. Enolase (MW 67,000)
4. Adenylate kinase (MW 32,000)
5. Cytochrome c (MW 12,400)



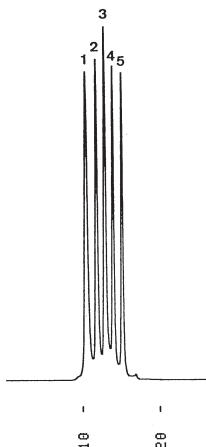
(G911214A)

Column	: YMC-Pack Diol-200 500 × 8.0 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.7 mL/min
Temperature	: ambient (26 °C)
Detection	: UV at 280 nm, 0.08 AUFS
Injection	: 15 μL (100 μL/1 vial)
Sample	: MW-Marker (HPLC), manufactured by ORIENTAL YEAST CO., LTD.

### タンパク分子量マーカー

#### Proteins for molecular weight marker

1. Glutamate dehydrogenase (MW 290,000)
2. Lactate dehydrogenase (MW 142,000)
3. Enolase (MW 67,000)
4. Adenylate kinase (MW 32,000)
5. Cytochrome c (MW 12,400)



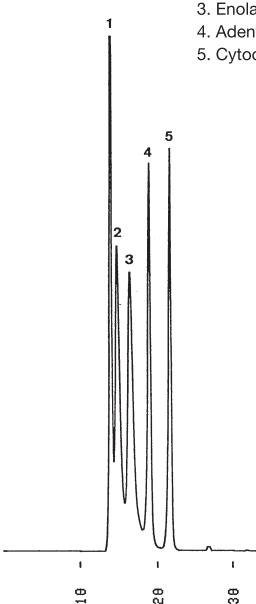
(G911214I)

Column	: YMC-Pack Diol-200 300 × 8.0 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.7 mL/min
Temperature	: ambient (26 °C)
Detection	: UV at 280 nm, 0.16 AUFS
Injection	: 15 μL (100 μL/1 vial)
Sample	: MW-Marker (HPLC), manufactured by ORIENTAL YEAST CO., LTD.

### タンパク分子量マーカー

#### Proteins for molecular weight marker

1. Glutamate dehydrogenase (MW 290,000)
2. Lactate dehydrogenase (MW 142,000)
3. Enolase (MW 67,000)
4. Adenylate kinase (MW 32,000)
5. Cytochrome c (MW 12,400)



(G911214B)

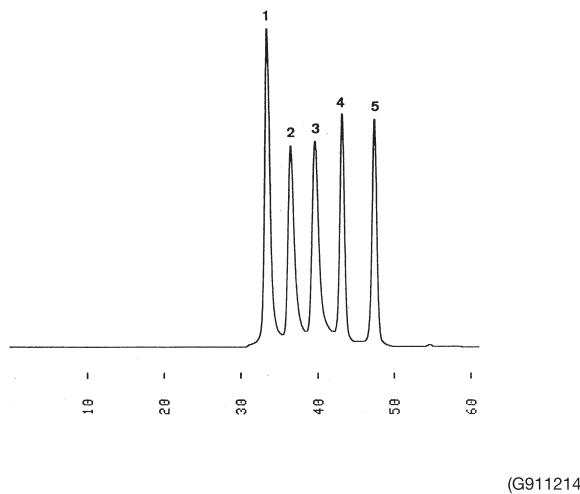
Column	: YMC-Pack Diol-120 500 × 8.0 mm I.D.
Eluent	: 0.1 M KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 7.0) containing 0.2 M NaCl
Flow rate	: 0.7 mL/min
Temperature	: ambient (26 °C)
Detection	: UV at 280 nm, 0.08 AUFS
Injection	: 15 μL (100 μL/1 vial)
Sample	: MW-Marker (HPLC), manufactured by ORIENTAL YEAST CO., LTD.

# 4 アミノ酸、ペプチド、タンパク質 Amino acids, Peptides, Proteins

## タンパク分子量マーカー

### Proteins for molecular weight marker

1. Glutamate dehydrogenase (MW 290,000)
2. Lactate dehydrogenase (MW 142,000)
3. Enolase (MW 67,000)
4. Adenylate kinase (MW 32,000)
5. Cytochrome c (MW 12,400)

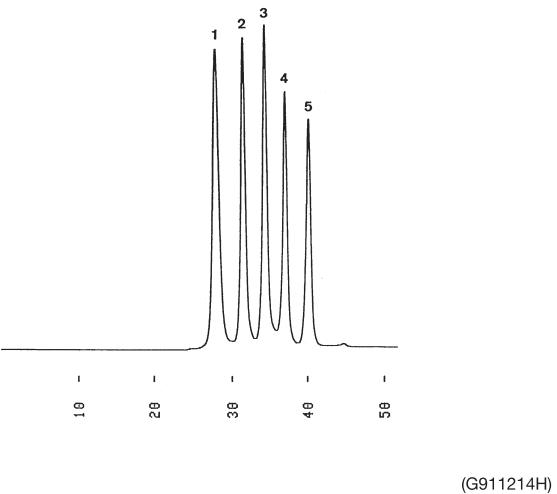


Column : YMC-Pack Diol-120 + Diol-300  
500 × 8.0 mm I.D. × 2  
Eluent : 0.1 M  $\text{KH}_2\text{PO}_4$ - $\text{K}_2\text{HPO}_4$  (pH 7.0) containing 0.2 M NaCl  
Flow rate : 0.7 mL/min  
Temperature : ambient (26 °C)  
Detection : UV at 280 nm, 0.08 AUFS  
Injection : 15  $\mu\text{L}$  (100  $\mu\text{L}/1$  vial)  
Sample : MW-Marker (HPLC), manufactured by ORIENTAL YEAST CO., LTD.

## タンパク分子量マーカー

### Proteins for molecular weight marker

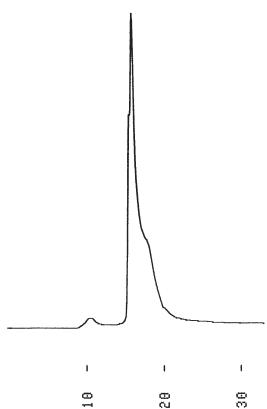
1. Glutamate dehydrogenase (MW 290,000)
2. Lactate dehydrogenase (MW 142,000)
3. Enolase (MW 67,000)
4. Adenylate kinase (MW 32,000)
5. Cytochrome c (MW 12,400)



Column : YMC-Pack Diol-200 + Diol-200  
500 × 8.0 mm I.D. + 300 × 8.0 mm I.D.  
Eluent : 0.1 M  $\text{KH}_2\text{PO}_4$ - $\text{K}_2\text{HPO}_4$  (pH 7.0) containing 0.2 M NaCl  
Flow rate : 0.7 mL/min  
Temperature : ambient (26 °C)  
Detection : UV at 280 nm, 0.08 AUFS  
Injection : 15  $\mu\text{L}$  (100  $\mu\text{L}/1$  vial)  
Sample : MW-Marker (HPLC), manufactured by ORIENTAL YEAST CO., LTD.

## カゼイン Casein

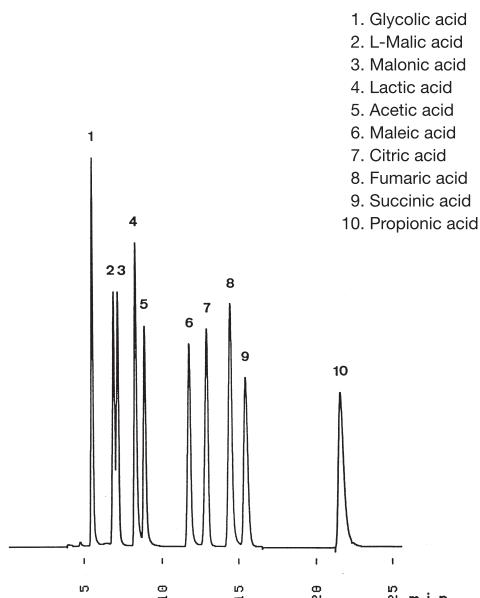
1. Casein



(G920123B)

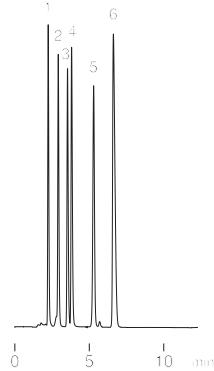
Column : YMC-Pack Diol-300  
500 × 8.0 mm I.D.  
Eluent : 0.1 M  $\text{KH}_2\text{PO}_4$ - $\text{K}_2\text{HPO}_4$  (pH 7.0) containing 0.2 M NaCl/acetonitrile (90/10)  
Flow rate : 1.0 mL/min  
Temperature : ambient (22 °C)  
Detection : UV at 215 nm, 0.16 AUFS  
Injection : 15  $\mu\text{L}$  (1.0 mg/mL)

有機酸  
Organic acids



1. Glycolic acid
2. L-Malic acid
3. Malonic acid
4. Lactic acid
5. Acetic acid
6. Maleic acid
7. Citric acid
8. Fumaric acid
9. Succinic acid
10. Propionic acid

有機酸  
Organic acids



1. Tartaric acid
2. L-Malic acid
3. Lactic acid
4. Acetic acid
5. Citric acid
6. Succinic acid

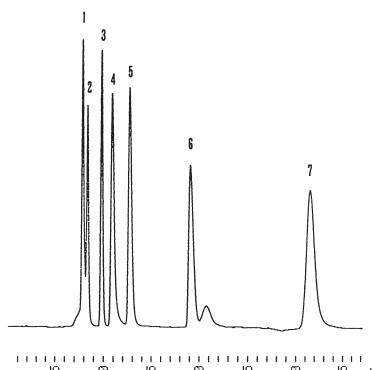
Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 20 mM H<sub>3</sub>PO<sub>4</sub>-NaH<sub>2</sub>PO<sub>4</sub> (pH 2.8)  
Flow rate : 0.7 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.08 AUFS  
Injection : 10  $\mu$ L (0.007 ~ 1.8 mg/mL)

(T910226A)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM NaH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.8)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.064 AUFS  
Injection : 10  $\mu$ L (0.25 ~ 2.0 mg/mL)

(A001218A)

有機酸  
Organic acids

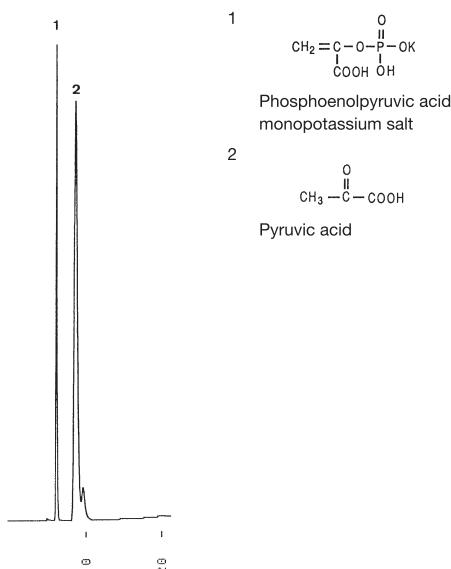


1. L-Malic acid
2. Lactic acid
3. Acetic acid
4. Maleic acid
5. Succinic acid
6. Propionic acid
7. Fumaric acid

Column : YMC-Pack PolymerC18  
250  $\times$  4.6 mm I.D.  
Eluent : 0.1% TFA  
Flow rate : 0.5 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.08 AUFS  
Injection : 10  $\mu$ L (0.016 ~ 2.2 mg/mL)

(Y910209)

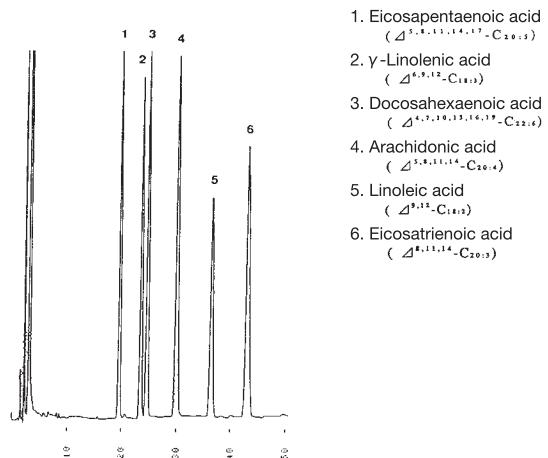
ピルビン酸  
Pyruvic acids



(O940901H)

Column : YMC-Pack PolymerC18  
250  $\times$  4.6 mm I.D.  
Eluent : 100 mM H<sub>3</sub>PO<sub>4</sub> (pH 1.7)  
Flow rate : 0.5 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.64 AUFS  
Injection : 5  $\mu$ L (0.7, 20 mg/mL)

不飽和脂肪酸メチルエステル  
Unsaturated fatty acid methyl esters

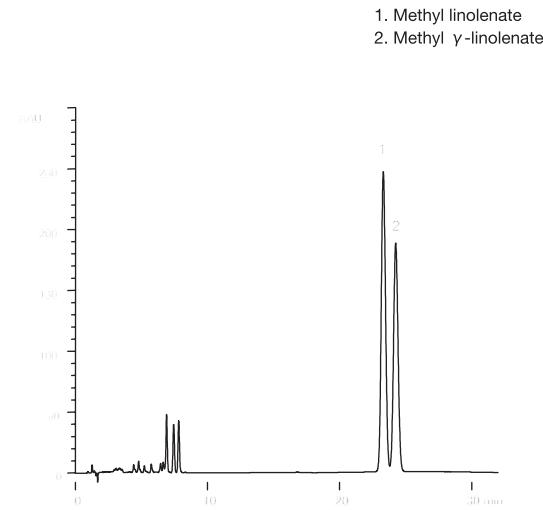


Courtesy of Dr. Yuji Saito, Tokyo Institute of Technology

(K930323A)

Column : YMC-Pack ODS-AM (5  $\mu\text{m}$ , 12 nm)  
 250  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/water (81/19)  
 Flow rate : 1.5 mL/min  
 Temperature : ambient  
 Detection : UV at 190 nm, 0.128 AUFS  
 Injection : 20  $\mu\text{L}$  (0.165 mg/mL)

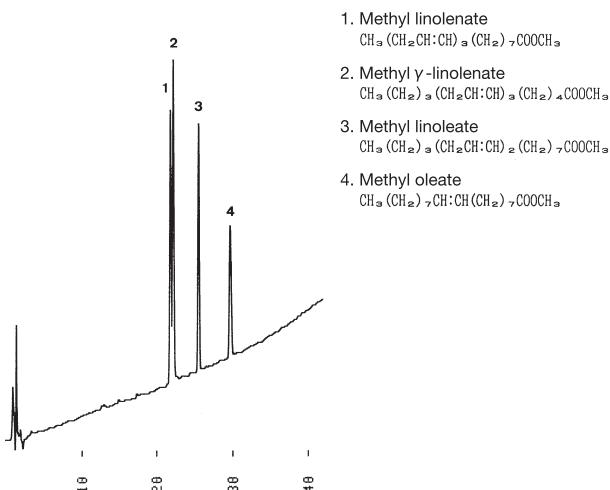
リノレン酸メチル異性体  
Methyl linolenate isomers



(F040713A)

Column : YMC-Pack Pro C18 RS (3  $\mu\text{m}$ , 8 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/THF/water (35/30/35)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : UV at 210 nm  
 Injection : 2  $\mu\text{L}$  (2.5  $\mu\text{L}/\text{mL}$ )

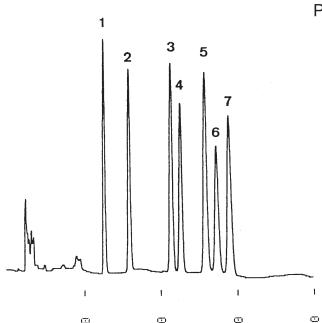
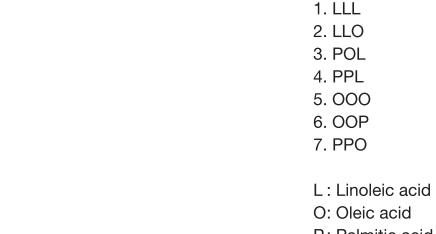
不飽和脂肪酸メチルエステル  
Unsaturated fatty acid methyl esters



(S931012C)

Column : J'sphere ODS-H80 (4  $\mu\text{m}$ , 8 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : A) acetonitrile/THF/water (10/30/60)  
 B) acetonitrile/THF/water (65/30/5)  
 20-100% B (0-40 min, linear)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 210 nm, 0.51 AUFS  
 Injection : 18  $\mu\text{L}$  (0.25 ~ 4  $\mu\text{L}/\text{mL}$ )

トリアシルグリセロール  
Triacylglycerols



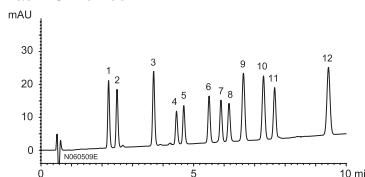
(O940914F)

Column : J'sphere ODS-H80 (4  $\mu\text{m}$ , 8 nm)  
 250  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/2-propanol (55/45)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 210 nm, 0.08 AUFS  
 Injection : 30  $\mu\text{L}$  (0.08 ~ 1.66 mg/mL)

## 大豆イソフラボンの高速分離

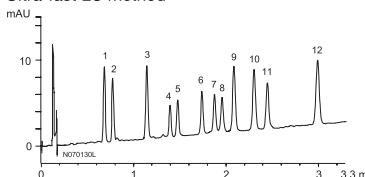
### Rapid separation of soy isoflavones

Fast LC method

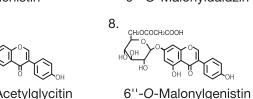
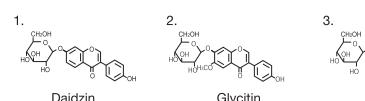


Column : HydroSphere C18 (3 μm, 12 nm)  
50 × 4.6 mm I.D.  
Flow rate : 1.5 mL/min  
Gradient : 25-60% B (0-10 min)  
Injection : 3 μL

Ultra-fast LC method



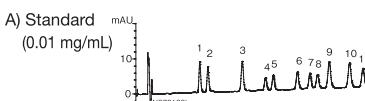
Column : YMC-UltraHT HydroSphere C18 (2 μm, 12 nm)  
50 × 2.0 mm I.D.  
Flow rate : 0.9 mL/min  
Gradient : 25-60% B (0-3.3 min)  
Injection : 0.6 μL



Eluent : A) water/acetic acid (100/3)  
B) acetonitrile/water/acetic acid (50/50/3)  
Temperature : 35 °C  
Detection : UV at 254 nm  
Sample : 0.01 mg/mL

## 食品中の大豆イソフラボン

### Soy isoflavones in foods



1. Daidzin  
2. Glycitin  
3. Genistin  
4. 6''-O-Malonyldaidzin  
5. 6''-O-Malonylglycitin  
6. 6''-O-Acetylaidzin  
7. 6''-O-Acetylglycitin  
8. 6''-O-Malonylgenistin  
9. Daidzein  
10. Glycitein  
11. 6''-O-Acetylgenistin  
12. Genistein

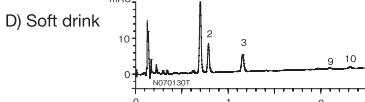


1. Daidzin  
2. Glycitin  
3. Genistin  
4. 6''-O-Malonyldaidzin  
5. 6''-O-Malonylglycitin  
6. 6''-O-Acetylaidzin  
7. 6''-O-Acetylglycitin  
8. 6''-O-Malonylgenistin  
9. Daidzein  
10. Glycitein  
11. 6''-O-Acetylgenistin  
12. Genistein



Sample preparation method

Sample B, C  
→ 50% aqueous ethanol  
Stirred at r.t. for 1 hr.  
Filtration  
Injection



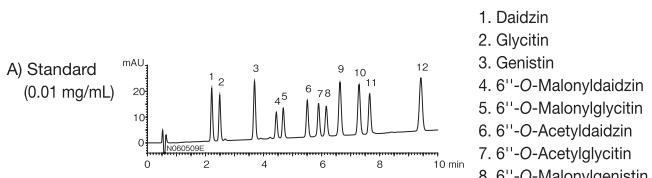
Sample D  
→ 50% aqueous ethanol  
Stirred at r.t. for 1 hr.  
Filtration  
Injection

(N080415Z)

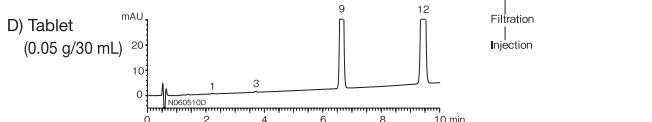
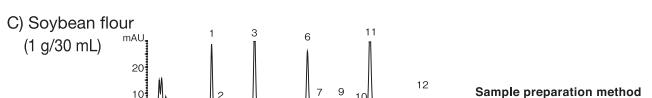
Column : YMC-UltraHT HydroSphere C18 (2 μm, 12 nm)  
50 × 2.0 mm I.D.  
Eluent : A) water/acetic acid (100/3)  
B) acetonitrile/water/acetic acid (50/50/3)  
25-60% B (0-3.3 min)  
Flow rate : 0.9 mL/min  
Temperature : 35 °C  
Detection : UV at 254 nm  
Injection : 0.6 μL

## 食品中の大豆イソフラボン

### Soy isoflavones in foods



1. Daidzin  
2. Glycitin  
3. Genistin  
4. 6''-O-Malonyldaidzin  
5. 6''-O-Malonylglycitin  
6. 6''-O-Acetylaidzin  
7. 6''-O-Acetylglycitin  
8. 6''-O-Malonylgenistin  
9. Daidzein  
10. Glycitein  
11. 6''-O-Acetylgenistin  
12. Genistein



Sample preparation method

Sample B-D  
→ 50% aqueous ethanol  
Stirred at r.t. for 1 hr.  
Filtration  
Injection

(N080411Y)

Column : HydroSphere C18 (3 μm, 12 nm)  
50 × 4.6 mm I.D.

Eluent : A) water/acetic acid (100/3)  
B) acetonitrile/water/acetic acid (50/50/3)  
25-60% B (0-10 min)

Flow rate : 1.5 mL/min

Temperature : 35 °C

Detection : UV at 254 nm

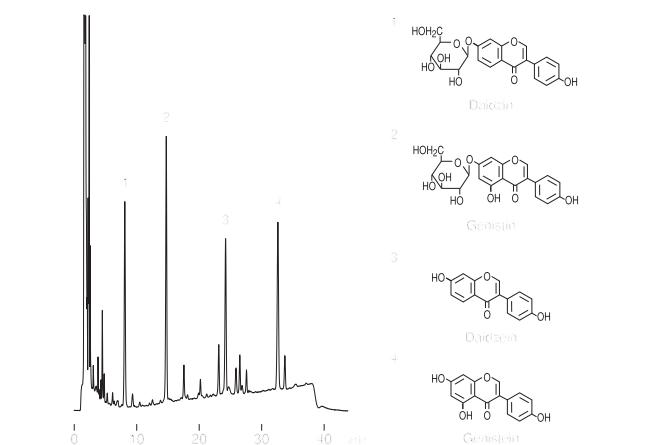
Injection : 3 μL

## 市販みそ中のイソフラボン

### Isoflavones from miso, fermented soybean paste

## 市販みそ中のイソフラボン

### Isoflavones from miso, fermented soybean paste



Column : HydroSphere C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.

Eluent : A) water/acetic acid (100/1)  
B) acetonitrile/water/acetic acid (50/50/1)  
30% B (0-5 min), 30-70% B (5-35 min)

Flow rate : 1.0 mL/min

Temperature : 37 °C

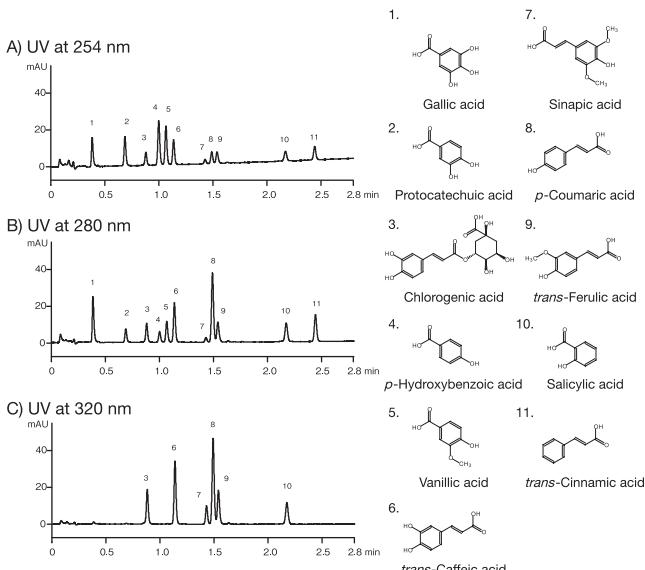
Detection : UV at 254 nm, 0.08 AUFS

Injection : 7 μL

Sample : methanol extract of miso

(F001025B)

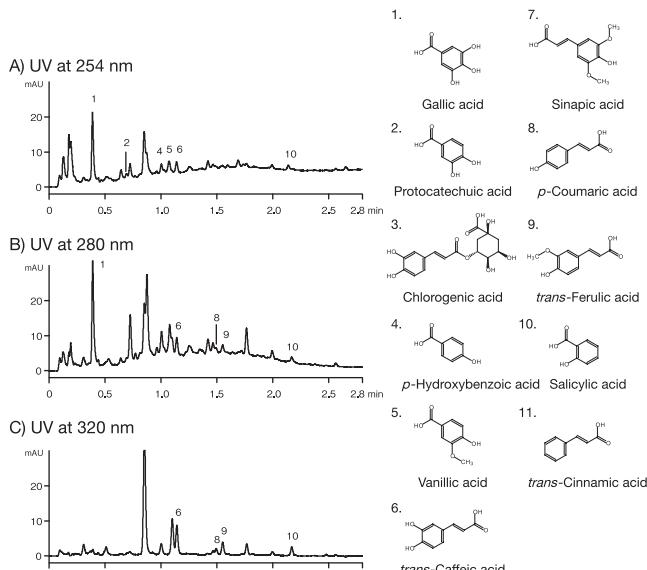
食品中の芳香族カルボン酸  
Aromatic carboxylic acids in foods



(F080616A)

Column	: YMC-UltraHT Pro C18 (2 $\mu$ m, 12 nm) 50 $\times$ 2.0 mm I.D.
Eluent	: A) water/HCOOH (200/0.4) B) acetonitrile/methanol/THF/water/HCOOH (43.5/43.5/13/100/0.4) 20-100% B (0-2.8 min)
Flow rate	: 0.5 mL/min
Temperature	: 40 °C
Detection	: A) UV at 254 nm, B) UV at 280 nm, C) UV at 320 nm
Injection	: 2 $\mu$ L (2.5 ~ 30 $\mu$ g/mL)

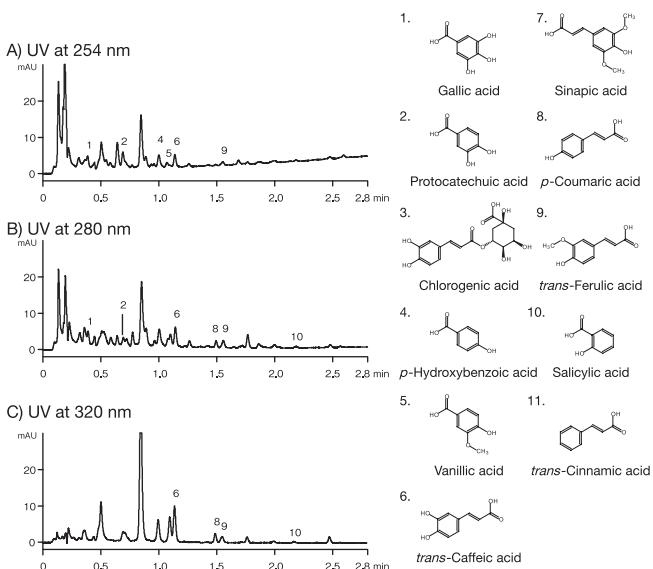
赤ワイン中の芳香族カルボン酸  
Aromatic carboxylic acids in a red wine



(F080616B)

Column	: YMC-UltraHT Pro C18 (2 $\mu$ m, 12 nm) 50 $\times$ 2.0 mm I.D.
Eluent	: A) water/HCOOH (200/0.4) B) acetonitrile/methanol/THF/water/HCOOH (43.5/43.5/13/100/0.4) 20-100% B (0-2.8 min)
Flow rate	: 0.5 mL/min
Temperature	: 40 °C
Detection	: A) UV at 254 nm, B) UV at 280 nm, C) UV at 320 nm
Injection	: 2 $\mu$ L
Sample	: 5 times dilution of a red wine with water

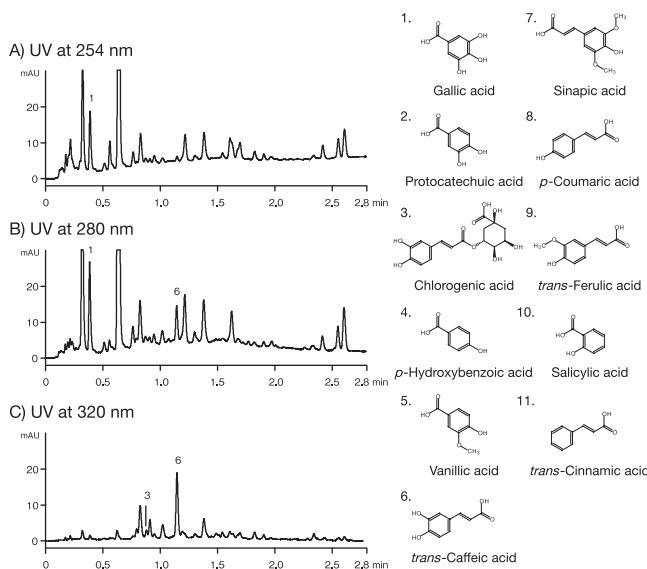
白ワイン中の芳香族カルボン酸  
Aromatic carboxylic acids in a white wine



(F080616C)

Column	: YMC-UltraHT Pro C18 (2 $\mu$ m, 12 nm) 50 $\times$ 2.0 mm I.D.
Eluent	: A) water/HCOOH (200/0.4) B) acetonitrile/methanol/THF/water/HCOOH (43.5/43.5/13/100/0.4) 20-100% B (0-2.8 min)
Flow rate	: 0.5 mL/min
Temperature	: 40 °C
Detection	: A) UV at 254 nm, B) UV at 280 nm, C) UV at 320 nm
Injection	: 2 $\mu$ L
Sample	: 2 times dilution of a white wine with water

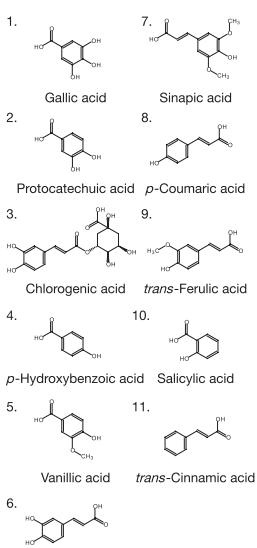
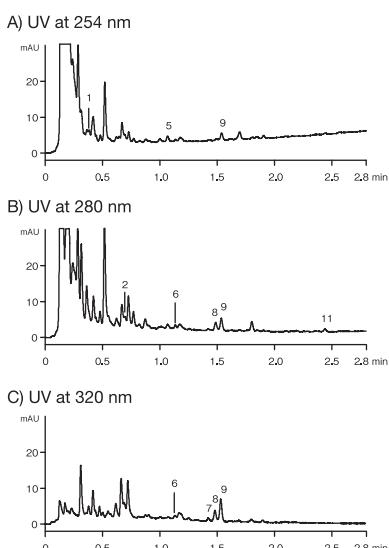
紅茶中の芳香族カルボン酸  
Aromatic carboxylic acids in a tea extract



(F080619B)

Column	: YMC-UltraHT Pro C18 (2 $\mu$ m, 12 nm) 50 $\times$ 2.0 mm I.D.
Eluent	: A) water/HCOOH (200/0.4) B) acetonitrile/methanol/THF/water/HCOOH (43.5/43.5/13/100/0.4) 20-100% B (0-2.8 min)
Flow rate	: 0.5 mL/min
Temperature	: 40 °C
Detection	: A) UV at 254 nm, B) UV at 280 nm, C) UV at 320 nm
Injection	: 2 $\mu$ L
Sample	: hot water extract of tea leaves (5 mg/mL)

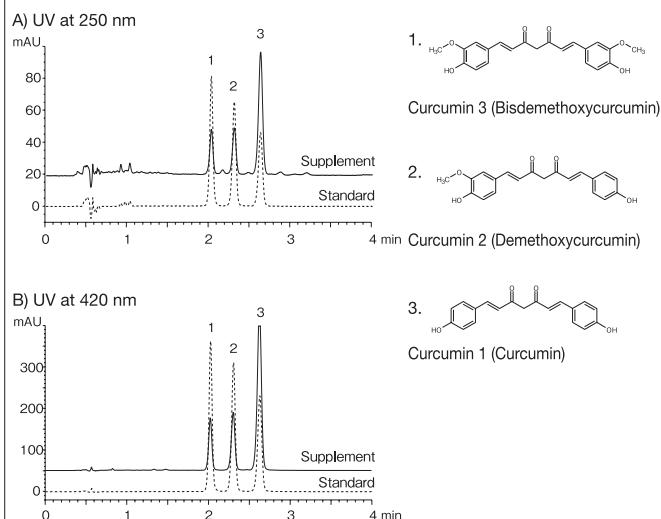
ビール中の芳香族カルボン酸  
Aromatic carboxylic acids in a beer



(F080619C)

Column : YMC-UltraHT Pro C18 (2  $\mu$ m, 12 nm)  
50  $\times$  2.0 mm I.D.  
Eluent : A) water/HCOOH (200/0.4)  
B) acetonitrile/methanol/THF/water/HCOOH (43.5/43.5/13/100/0.4)  
20-100% B (0-2.8 min)  
Flow rate : 0.5 mL/min  
Temperature : 40 °C  
Detection : A) UV at 254 nm, B) UV at 280 nm, C) UV at 320 nm  
Injection : 2  $\mu$ L  
Sample : 2 times dilution of a beer with water

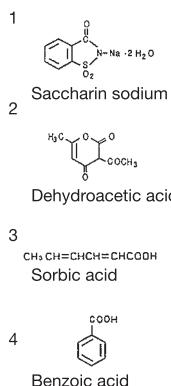
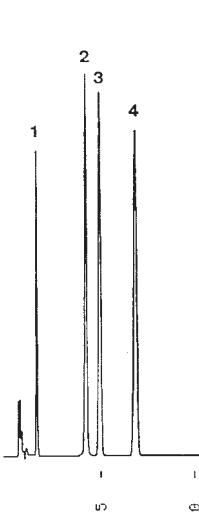
ウコンサプリメント中のクルクミン  
Curcuminoids in a commercial turmeric supplement



(N070729S)

Column : YMC-UltraHT Pro C18 (2  $\mu$ m, 12 nm)  
100  $\times$  2.0 mm I.D.  
Eluent : acetonitrile/water/formic acid (50/50/0.1)  
Flow rate : 0.4 mL/min  
Temperature : 40 °C  
Detection : A) UV at 250 nm, B) UV at 420 nm  
Injection : Standard 1  $\mu$ L (0.1 mg/mL)  
Supplement 1  $\mu$ L (6.9 mg/mL)  
Sample : methanol extract of a commercially available turmeric supplement

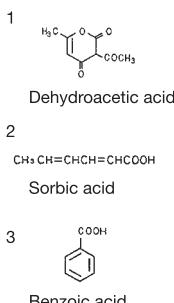
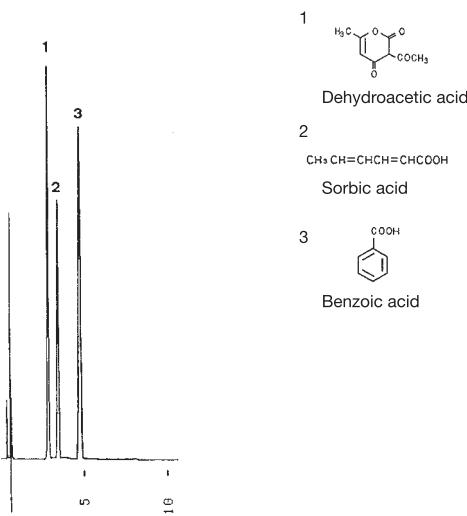
食品保存料  
Food preservatives



(O940819A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/water/TFA (20/80/0.1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.16 AUFS  
Injection : 2  $\mu$ L (0.13 ~ 0.32 mg/mL)

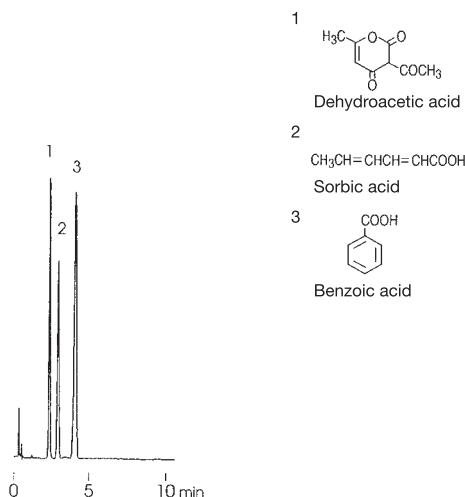
食品保存料  
Food preservatives



(O940802I)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/water/acetic acid (20/80/0.5)  
Flow rate : 2.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.08 AUFS  
Injection : 4  $\mu$ L (56  $\mu$ g/mL)

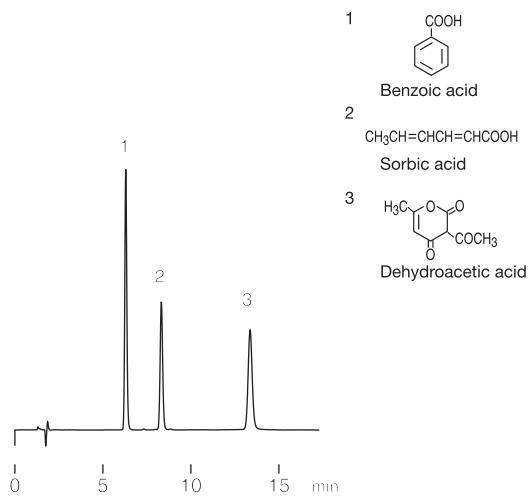
食品保存料  
Food preservatives



(S970204F)

Column : YMC-Pack Pro C18 (5  $\mu\text{m}$ , 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/water/acetic acid (20/80/0.5)  
Flow rate : 2.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.13 AUFS  
Injection : 5  $\mu\text{L}$  (0.05 mg/mL)

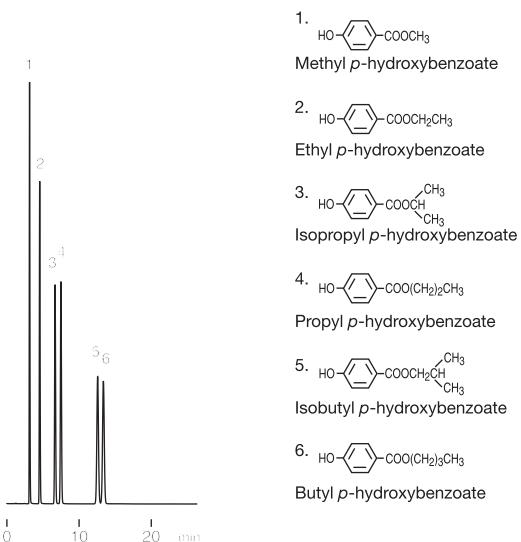
食品保存料  
Food preservatives



(J011213F)

Column : YMC-Pack Pro C18 RS (5  $\mu\text{m}$ , 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM CH<sub>3</sub>COONa-CH<sub>3</sub>COOH (pH 4.3)/acetonitrile (80/20)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.26 AUFS  
Injection : 10  $\mu\text{L}$  (0.02 mg/mL)

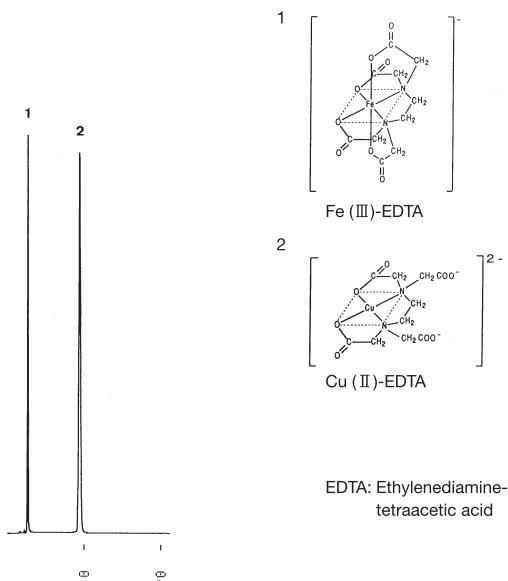
パラオキシ安息香酸エステル類  
*p*-Hydroxybenzoic acid esters



(J020826A)

Column : YMC-Pack Pro C18 RS (5  $\mu\text{m}$ , 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (60/40)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 270 nm, 0.32 AUFS  
Injection : 4  $\mu\text{L}$  (0.1 mg/mL)

EDTA キレート  
EDTA-chelates

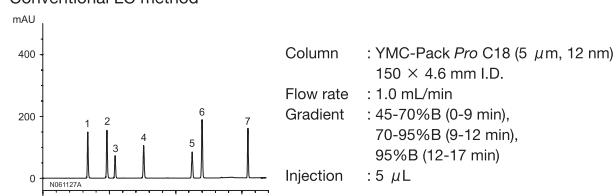


(T940208A)

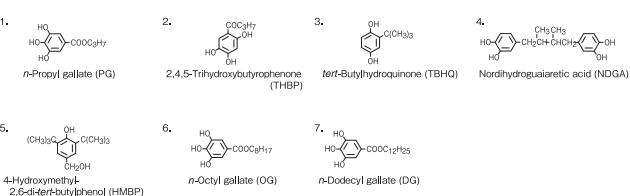
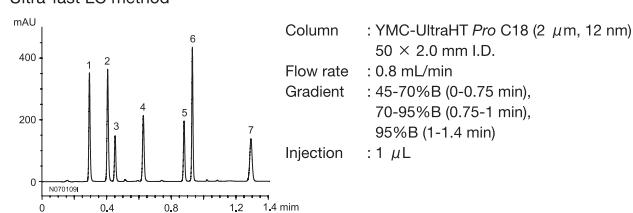
Column : J'sphere ODS-H80 (4  $\mu\text{m}$ , 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM CH<sub>3</sub>COONa-CH<sub>3</sub>COOH (pH 4.6) containing 20 mM tetrabutylammonium bromide  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.04 AUFS  
Injection : 10  $\mu\text{L}$  (0.017 ~ 0.13 mg/mL)

酸化防止剤 - 2 μm カラムによる超高速分析  
Antioxidants - method transfer to ultra-fast LC

Conventional LC method



Ultra-fast LC method



(N070629B)

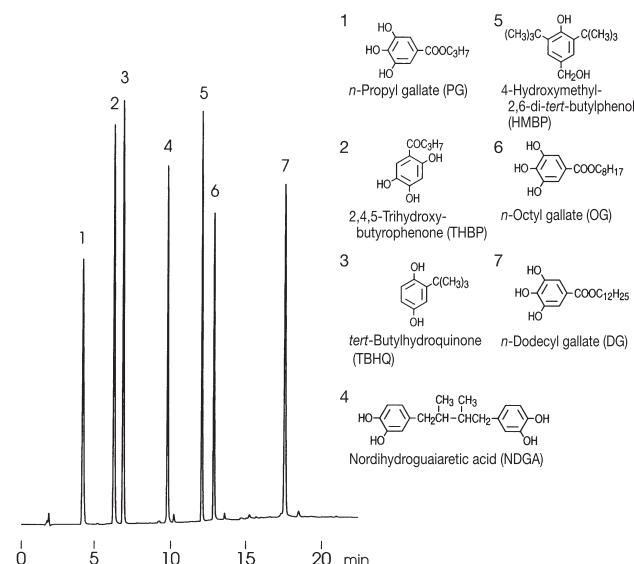
Eluent : A) water/TFA (100/0.1)  
B) acetonitrile/methanol/TFA (75/25/0.1)

Temperature : 30 °C

Detection : UV at 280 nm

Sample : 0.05 ~ 0.3 mg/mL

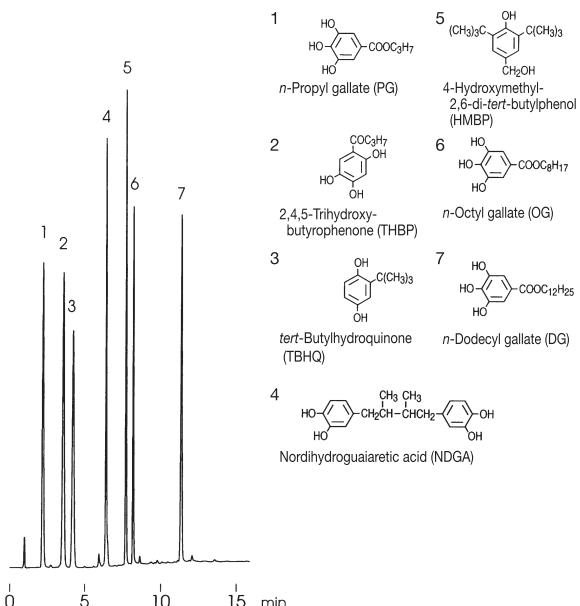
酸化防止剤  
Antioxidants



(A970524B)

Column : YMC-Pack Pro C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : A) acetonitrile/methanol/5% acetic acid (20/20/60)  
B) acetonitrile/methanol/5% acetic acid (45/45/10)  
0-100% B (0-10 min), 100% B (10-20 min)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 9 μL (0.05 ~ 0.6 mg/mL)

酸化防止剤  
Antioxidants



(A970526C)

Column : YMC-Pack Pro C18 (5 μm, 12 nm)  
75 × 4.6 mm I.D.

Eluent : A) acetonitrile/methanol/5% acetic acid (20/20/60)  
B) acetonitrile/methanol/5% acetic acid (45/45/10)  
0-100% B (0-5 min), 100% B (5-15 min)

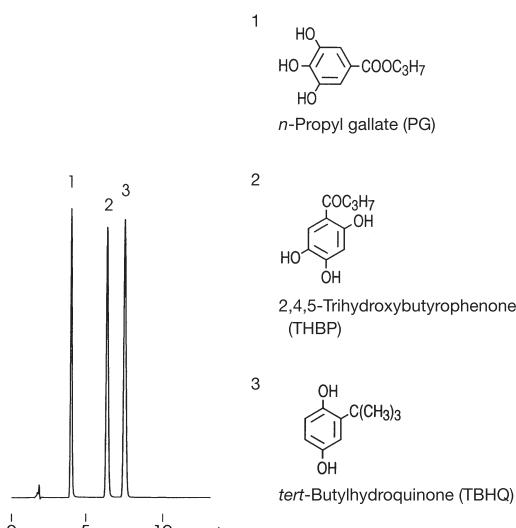
Flow rate : 1.0 mL/min

Temperature : 30 °C

Detection : UV at 280 nm, 0.32 AUFS

Injection : 9 μL (0.05 ~ 0.6 mg/mL)

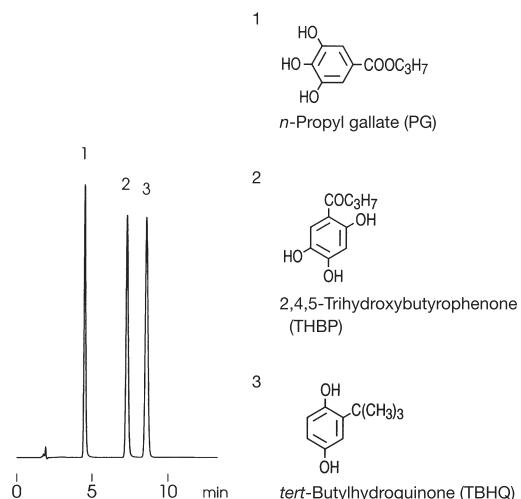
酸化防止剤  
Antioxidants



(A970522B)

Column : YMC-Pack Pro C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : acetonitrile/methanol/5% acetic acid (20/20/60)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 10 μL (0.05 ~ 0.2 mg/mL)

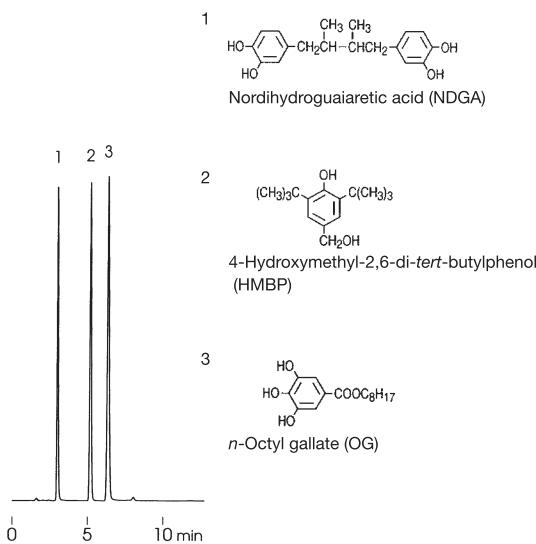
酸化防止剤  
Antioxidants



(A970522D)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/methanol/5% acetic acid (20/20/60)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.2 mg/mL)

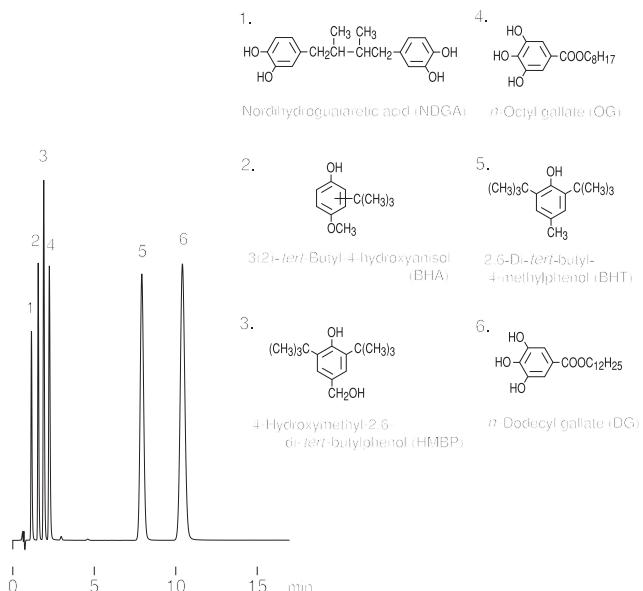
酸化防止剤  
Antioxidants



(A970521B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/methanol/5% acetic acid (35/35/30)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.1 ~ 0.6 mg/mL)

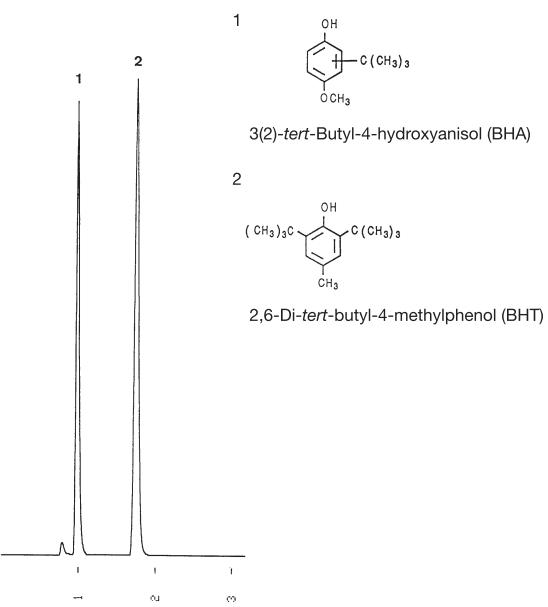
酸化防止剤  
Antioxidants



(J010215B)

Column : Hydrosphere C18 (3  $\mu$ m, 12 nm)  
50  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/methanol/5% acetic acid (35/35/30)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.5 mg/mL)

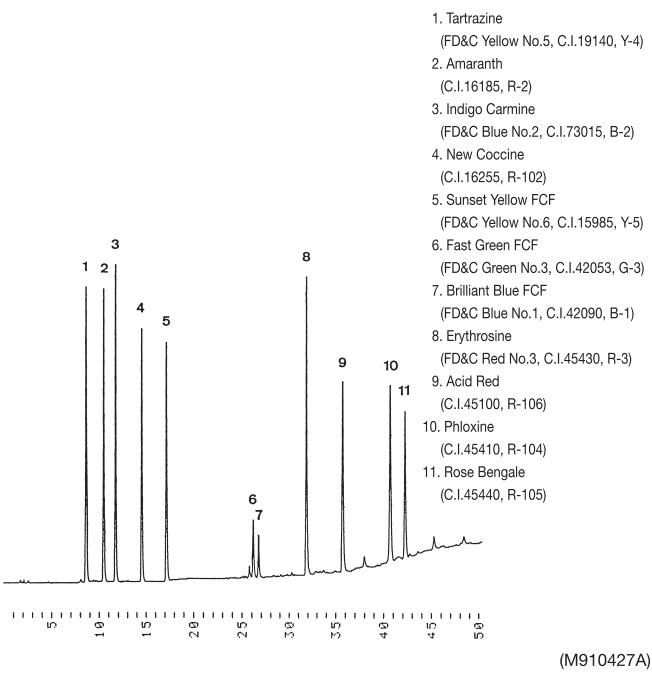
酸化防止剤  
Antioxidants



(O940810D)

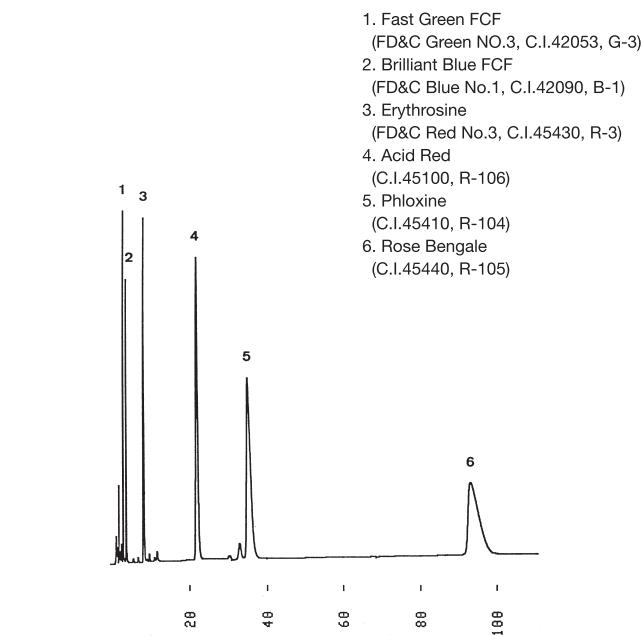
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/water (95/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.16 AUFS  
Injection : 1  $\mu$ L (0.5 mg/mL)

タール色素  
Color additives



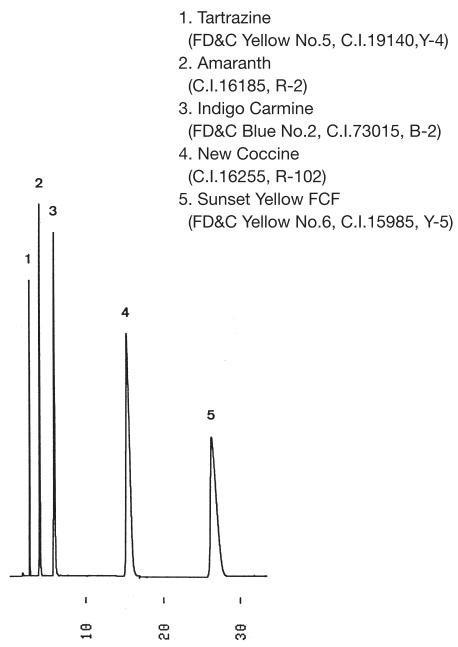
Column	: YMC-Pack ODS-A (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: A) 10 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> -(NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub> (pH 6.0)/methanol (90/10) B) 10 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> -(NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub> (pH 6.0)/methanol (20/80) 0-100% B (0-40 min, linear), 100% B (40-60 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm, 0.32 AUFS
Injection	: 100 μL (5 μg/mL)

タール色素  
Color additives



Column	: YMC-Pack ODS-A (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: acetonitrile/10 mM CH <sub>3</sub> COONH <sub>4</sub> (25/75)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm, 0.08 AUFS
Injection	: 10 μL (35 ~ 140 μg/mL)

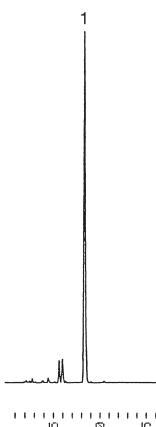
タール色素  
Color additives



Column	: YMC-Pack ODS-A (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: acetonitrile/10 mM CH <sub>3</sub> COONH <sub>4</sub> (8/92)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm, 0.16 AUFS
Injection	: 5 μL (25 ~ 200 μg/mL)

水溶性アナトー  
Annatto extract

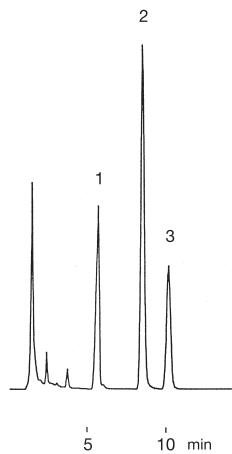
1. Annatto pigment



Column	: YMC-Pack ODS-AM (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: acetonitrile/water/acetic acid (65/34/1)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: VIS at 454 nm, 0.16 AUFS
Injection	: 5 μL (2 mg/mL)
Sample	: Annatto pigment

市販炭酸飲料中のアスパルテーム  
Aspartame in a soft drink

1. Benzoic acid  
2. Caffeine  
3. Aspartame

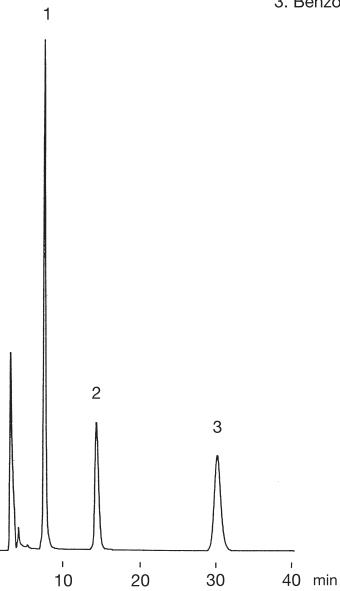


(T910123)

Column : YMC-Pack Ph (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM KH<sub>2</sub>PO<sub>4</sub>/acetonitrile/methanol (84/3/13)  
Flow rate : 1.5 mL/min  
Temperature : 30 °C  
Detection : UV at 214 nm, 0.64 AUFS  
Injection : 10  $\mu$ L

市販炭酸飲料中のアスパルテーム  
Aspartame in a soft drink

1. Caffeine  
2. Aspartame  
3. Benzoic acid

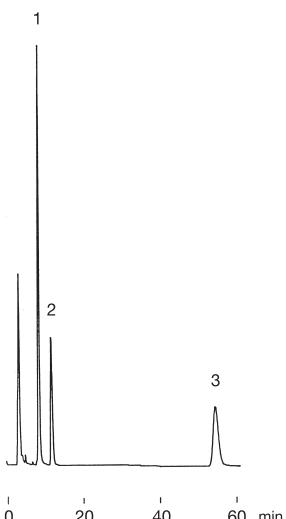


(H900710A)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (15/85/0.05)  
Flow rate : 0.5 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.64 AUFS  
Injection : 5  $\mu$ L

市販炭酸飲料中のアスパルテーム  
Aspartame in a soft drink

1. Caffeine  
2. Aspartame  
3. Benzoic acid

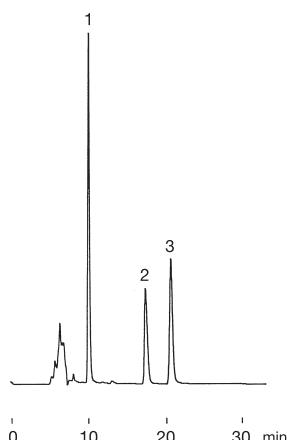


(H900710B)

Column : YMC-Pack PolymerC18  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (15/85/0.05)  
Flow rate : 0.5 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.64 AUFS  
Injection : 5  $\mu$ L

市販炭酸飲料中のアスパルテーム  
Aspartame in a soft drink

1. Caffeine  
2. Aspartame  
3. Benzoic acid

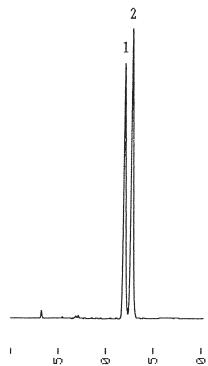


(H900710C)

Column : YMC-Pack CN (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (15/85/0.05)  
Flow rate : 0.5 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.64 AUFS  
Injection : 5  $\mu$ L

ステビオサイドとレバウディオサイド A  
Stevioside and rebaudioside A

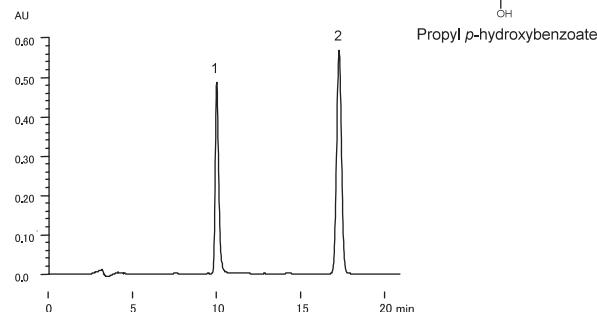
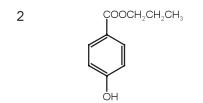
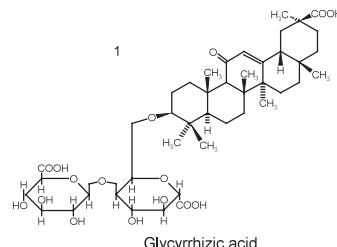
1. Stevioside  
2. Rebaudioside A



(G900727B)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  6.0 mm I.D.  
Eluent : acetonitrile/water (35/65)  
Flow rate : 0.5 mL/min  
Temperature : 30 °C  
Detection : UV at 205 nm, 0.32 AUFS  
Injection : 7  $\mu$ L

グリチルリチン酸  
Glycyrrhetic acid



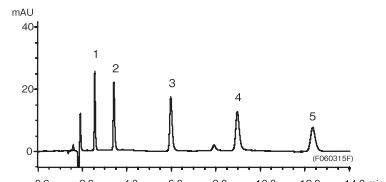
(F040622C)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/5 M acetic acid (400/560/40)  
Flow rate : 0.5 mL/min  
Temperature : 20 °C  
Detection : UV at 254 nm  
Injection : 20  $\mu$ L (0.05 ~ 0.25 mg/mL)  
(日本薬局方第14改正記載条件)

アルカロイド - 2 μm カラムによる超高速分析  
Alkaloids - method transfer to ultra-fast LC

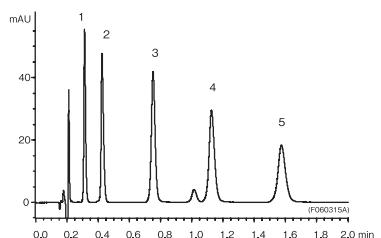
1. Scopolamine
2. Atropine
3. Cinchonine
4. Quinine
5. Dihydroquinine

Conventional LC method



Column : YMC-Pack Pro C18  
(5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Flow rate : 1.0 mL/min  
Injection : 5 μL

Ultra-fast LC method

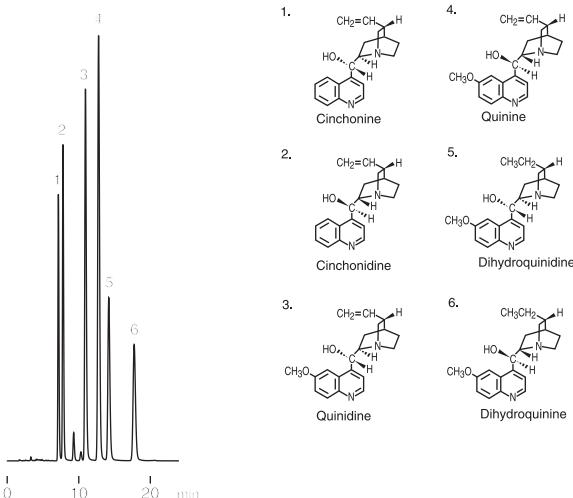


Column : YMC-UltraHT Pro C18  
(2 μm, 12 nm)  
50 × 2.0 mm I.D.  
Flow rate : 0.6 mL/min  
Injection : 1 μL

(F080627A)

Eluent : 20 mM CH<sub>3</sub>COOH-CH<sub>3</sub>COONH<sub>4</sub> (pH 4.9)/acetonitrile (80/20)  
Temperature : 40 °C  
Detection : UV at 220 nm  
Sample : 0.02 ~ 0.1 mg/mL

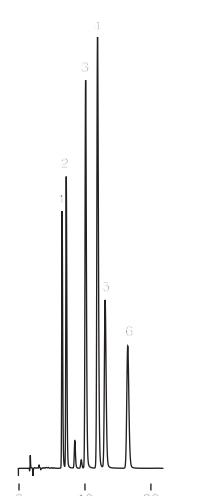
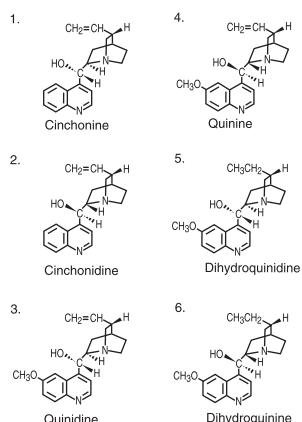
アルカロイド  
Alkaloids



(J020828B)

Column : Hydrosphere C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : methanol/20 mM KH<sub>2</sub>PO<sub>4</sub> (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 235 nm, 0.08 AUFS  
Injection : 10 μL (0.01 ~ 0.03 mg/mL)

アルカロイド - 酢酸緩衝液  
Alkaloids - acetate buffer

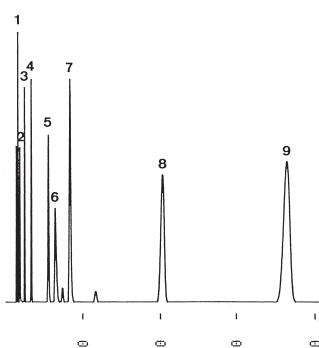


(J021010D)

Column : Hydrosphere C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 20 mM CH<sub>3</sub>COOH-CH<sub>3</sub>COONH<sub>4</sub> (pH 4.9)/methanol (65/35)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 235 nm, 0.08 AUFS  
Injection : 10 μL (0.01 ~ 0.03 mg/mL)

アルカロイド  
Alkaloids

1. Hordenine sulfate
2. Pilocarpine chloride
3. Scopolamine bromide
4. Atropine sulfate
5. Cinchonine
6. Sparteine sulfate
7. Quinine
8. Papaverine chloride
9. Narcotine chloride

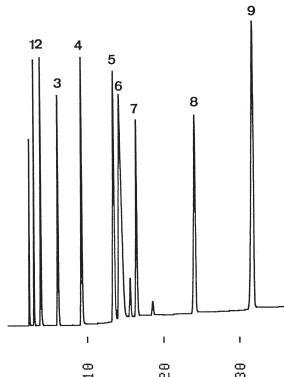


(G910523J)

Column : YMC-Pack ODS-AM (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : acetonitrile/20 mM KH<sub>2</sub>PO<sub>4</sub> (20/80)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 210 nm, 0.16 AUFS  
Injection : 5 μL (0.05 ~ 2.19 mg/mL)

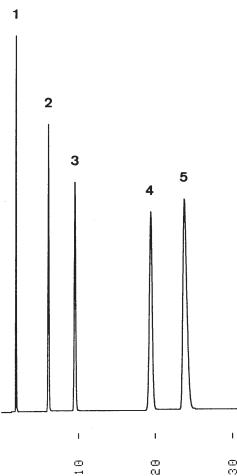
アルカロイド  
Alkaloids

1. Hordenine sulfate
2. Pilocarpine chloride
3. Scopolamine bromide
4. Atropine sulfate
5. Cinchonine
6. Sparteine sulfate
7. Quinine
8. Papaverine chloride
9. Narcotine chloride



(G910523K)

Column	: YMC-Pack ODS-AM (5 $\mu$ m, 12 nm) 150 $\times$ 6.0 mm I.D.
Eluent	: A) acetonitrile/20 mM KH <sub>2</sub> PO <sub>4</sub> (17/83) B) acetonitrile/20 mM KH <sub>2</sub> PO <sub>4</sub> (40/60) 0-100% B (0-30 min, linear), 100% B (30-40 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 210 nm, 0.16 AUFS
Injection	: 5 $\mu$ L (0.03 ~ 2.19 mg/mL)

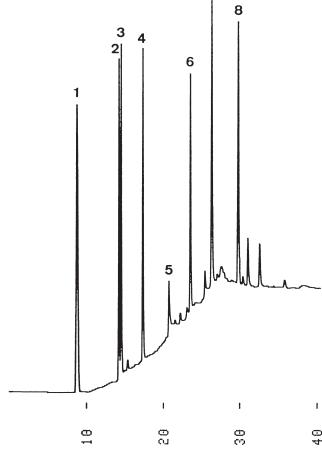


(M910612C)

Column	: YMC-Pack ODS-AQ (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: acetonitrile/water (8/92)
Flow rate	: 1.0 mL/min
Temperature	: 20 °C
Detection	: UV at 254 nm, 0.32 AUFS
Injection	: 5 $\mu$ L (0.3 ~ 4.5 mg/mL)

生葉成分（配糖体）  
Crude drugs (Glycosides)

1. Arbutin
2. Salicin
3. Esculetin
4. G-Strophanthin (Ouabain)
5. Baicalin
6. Barbaloin
7. Glycyrrhizin
8. Digitoxin

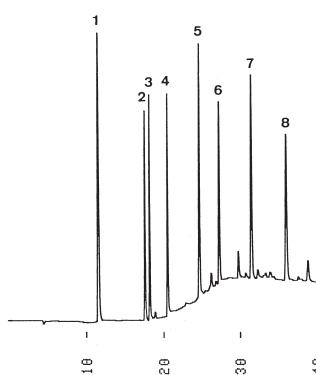


(G910618B)

Column	: YMC-Pack ODS-A (5 $\mu$ m, 30 nm) 250 $\times$ 6.0 mm I.D.
Eluent	: A) methanol/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (5/95) B) methanol/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (80/20) 0-100% B (0-20 min, linear), 100% B (20-40 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 250 nm, 0.04 AUFS
Injection	: 20 $\mu$ L (0.01 ~ 0.49 mg/mL)

生葉成分（配糖体）  
Crude drugs (Glycosides)

1. Arbutin
2. Salicin
3. Esculetin
4. G-Strophanthin (Ouabain)
5. Baicalin
6. Barbaloin
7. Glycyrrhizin
8. Digitoxin

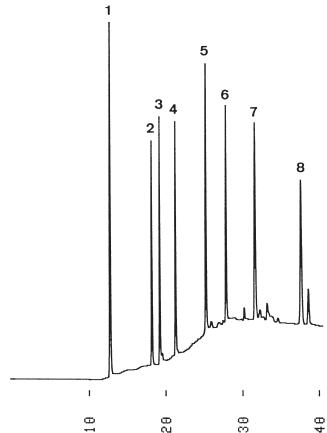


(G910607D)

Column	: YMC-Pack ODS-A (5 $\mu$ m, 12 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: A) methanol/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (5/95) B) methanol/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (80/20) 0-100% B (0-20 min, linear), 100% B (20-40 min)
Flow rate	: 0.6 mL/min
Temperature	: 30 °C
Detection	: UV at 250 nm, 0.08 AUFS
Injection	: 18 $\mu$ L (0.01 ~ 0.49 mg/mL)

生薬成分（配糖体）  
Crude drugs (Glycosides)

1. Arbutin
2. Salicin
3. Esculetin
4. G-Strophanthin (Ouabain)
5. Baicalin
6. Barbalin
7. Glycyrrhizin
8. Digitoxin

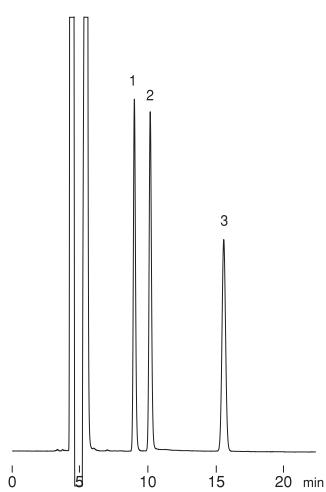


(G910607E)

Column	: YMC-Pack ODS-AQ (5 $\mu$ m, 12 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: A) methanol/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (5/95) B) methanol/20 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (80/20) 0-100% B (0-20 min, linear), 100% B (20-40 min)
Flow rate	: 0.6 mL/min
Temperature	: 30 °C
Detection	: UV at 250 nm, 0.08 AUFS
Injection	: 18 $\mu$ L (0.01 ~ 0.49 mg/mL)

ペオニフロリン  
Paeoniflorin

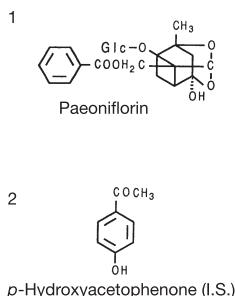
1. Albiflorin
2. Paeoniflorin
3. *p*-Hydroxyacetophenone (I.S.)



(A980818A)

Column	: YMC-Pack Pro C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: acetonitrile/water/acetic acid (20/80/1)
Flow rate	: 0.4 mL/min
Temperature	: 25 °C
Detection	: UV at 230 nm, 0.16 AUFS
Injection	: 10 $\mu$ L (48 ~ 56 $\mu$ g/mL)

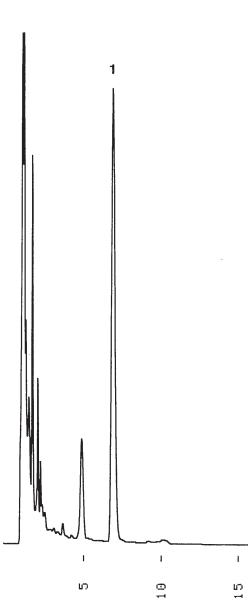
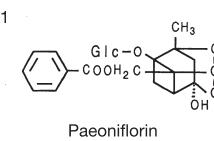
ペオニフロリン  
Paeoniflorin



(O941121M)

Column	: J'sphere ODS-H80 (4 $\mu$ m, 8 nm) 75 $\times$ 4.6 mm I.D.
Eluent	: THF/50 mM (NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub> (10/90)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 230 nm, 0.16 AUFS
Injection	: 3 $\mu$ L (0.67, 0.33 mg/mL)

当帰芍薬散中のペオニフロリン  
Paeoniflorin in Toki-shakuyaku-san

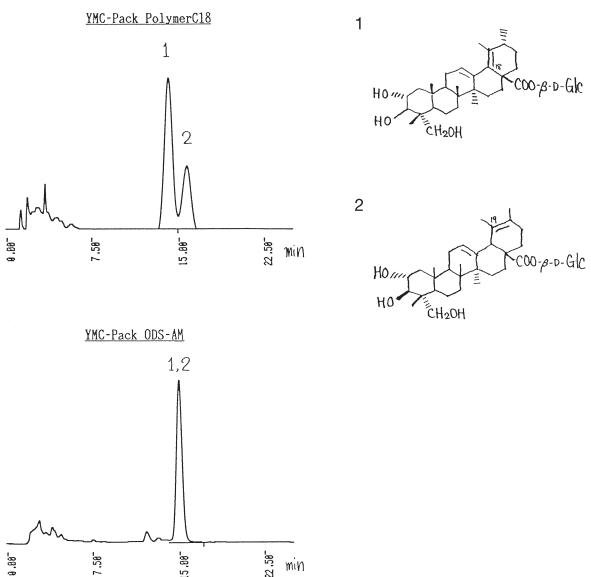


(O941121)

Column	: J'sphere ODS-H80 (4 $\mu$ m, 8 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: THF/50 mM (NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub> (10/90)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 230 nm, 0.16 AUFS
Injection	: 3 $\mu$ L
Sample	: water extract from Toki-shakuyaku-san

### トリテルペニ系サポニン

Saponins from roots of rubus suavissimus S. Lee



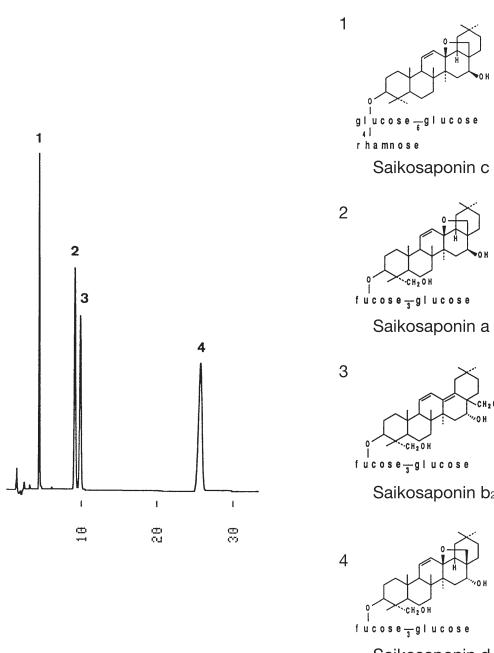
Courtesy of Dr.Ohtani,Hiroshima University,Japan

(Y910123)

Column : YMC-Pack PolymerC18 and YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (45/55) for PolymerC18  
methanol/water (50/50) for ODS-AM  
Flow rate : 0.8 mL/min  
Temperature : 50 °C  
Detection : UV at 210 nm, 0.32 AUFS  
Sample :  
1)  $\beta$ -D-Glucopyranosyl 2 $\alpha$ ,3 $\beta$ ,23-trihydroxyurs-12,18-dien-28-oate  
2)  $\beta$ -D-Glucopyranosyl 2 $\alpha$ ,3 $\beta$ ,23-trihydroxyurs-12,19-diene-28-oate

### サイコサポニン

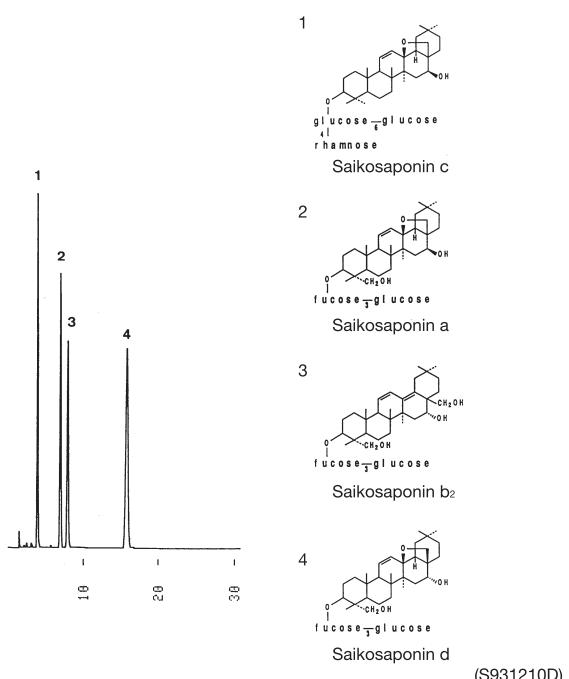
Saikosaponins



(S931210C)

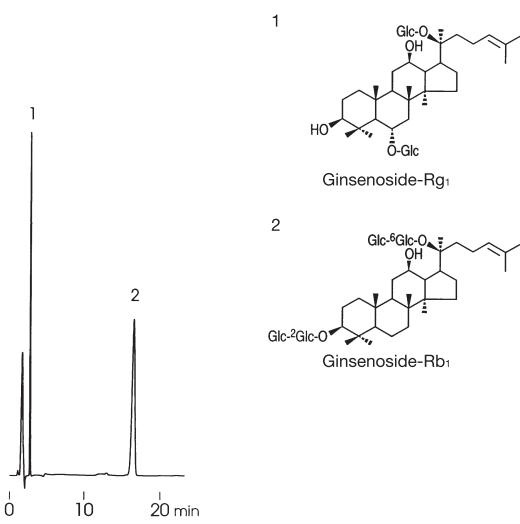
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (38/62)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.26 AUFS  
Injection : 8  $\mu$ L (0.5 ~ 0.75 mg/mL)

### サイコサポニン Saikosaponins



Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (38/62)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.26 AUFS  
Injection : 8  $\mu$ L (0.5 ~ 0.75 mg/mL)

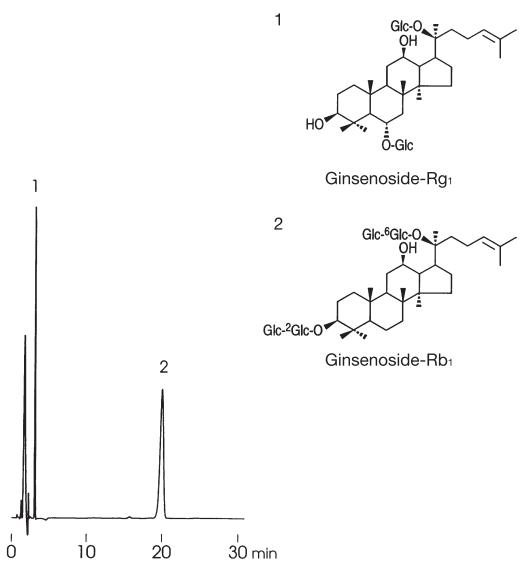
### ジンセノサイド Ginsenosides



(A971118B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 203 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.125, 0.5 mg/mL)

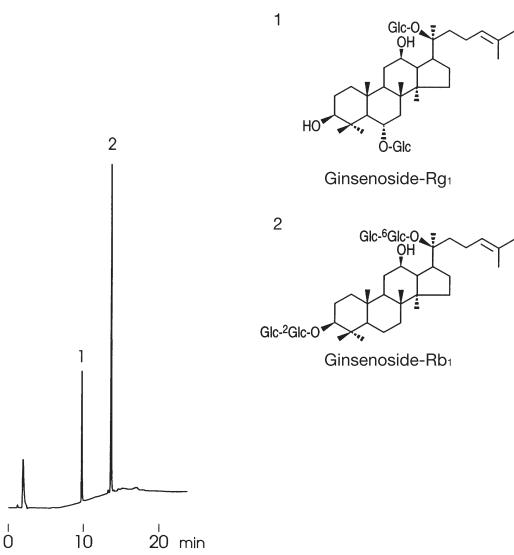
ジンセノサイド  
Ginsenosides



(A971120C)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 203 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.125, 0.5 mg/mL)

ジンセノサイド  
Ginsenosides

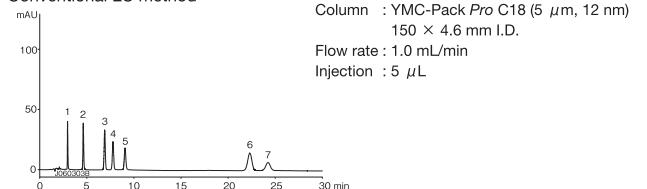


(A971121D)

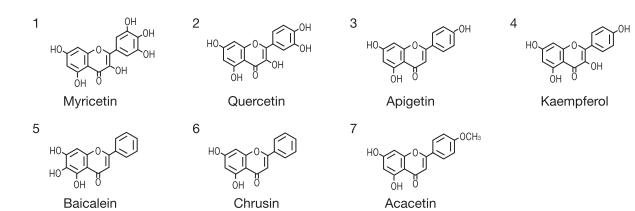
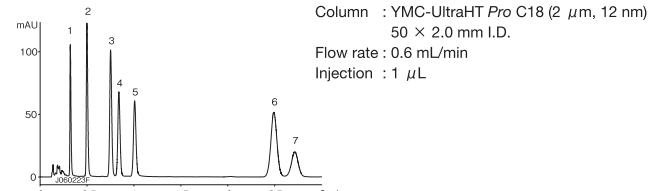
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  3.0 mm I.D.  
Eluent : A) acetonitrile/water (20/80)  
B) acetonitrile/water (40/60)  
0-100% B (0-10 min), 100% B (10-20 min)  
Flow rate : 0.4 mL/min  
Temperature : 37 °C  
Detection : UV at 203 nm, 0.32 AUFS  
Injection : 4  $\mu$ L (0.125, 0.5 mg/mL)

フラボノイド - 2  $\mu$ m カラムによる超高速分析  
Flavonoids - method transfer to ultra-fast LC

Conventional LC method



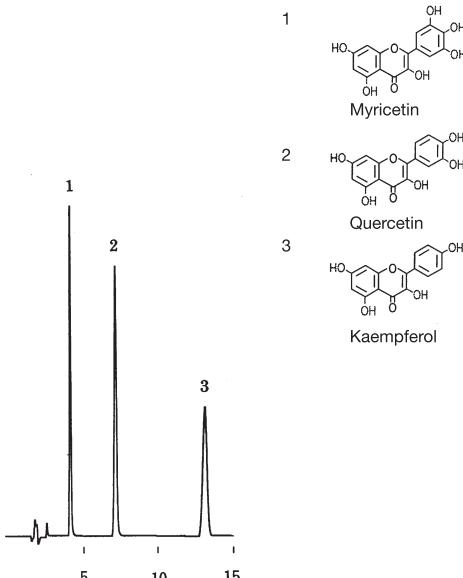
Ultra-fast LC method



(N080626L)

Eluent : acetonitrile/water/formic acid (35/65/0.1)  
Temperature : 40 °C  
Detection : UV at 260 nm  
Sample : 0.05 mg/mL

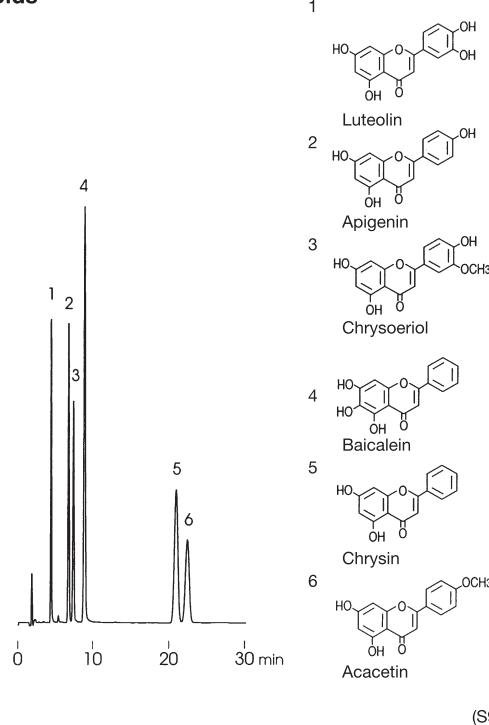
フラボノイド  
Flavonoids



(D960722A)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 260 nm, 0.064 AUFS  
Injection : 2  $\mu$ L (0.05 mg/mL)

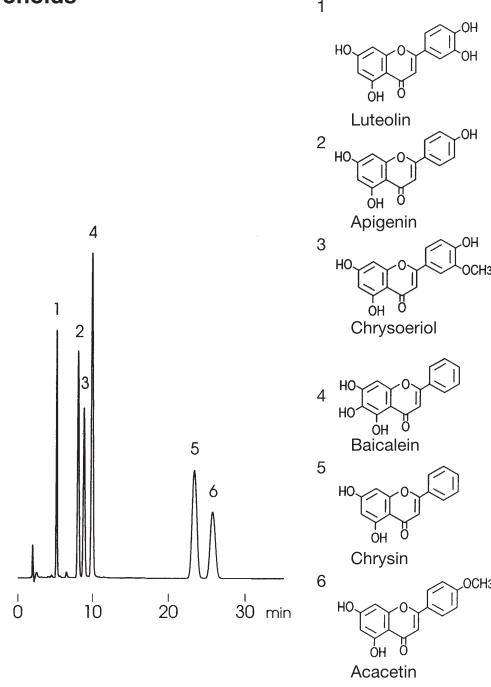
フラボノイド  
Flavonoids



(S961107C)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.13 AUFS  
Injection : 5  $\mu$ L (0.05 mg/mL)

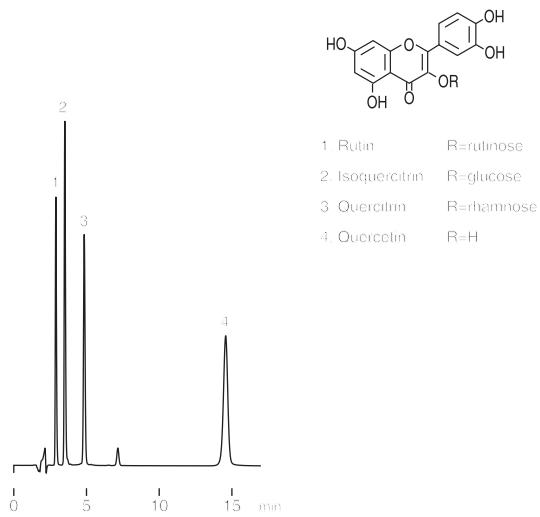
フラボノイド  
Flavonoids



(S961111B)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.13 AUFS  
Injection : 5  $\mu$ L (0.05 mg/mL)

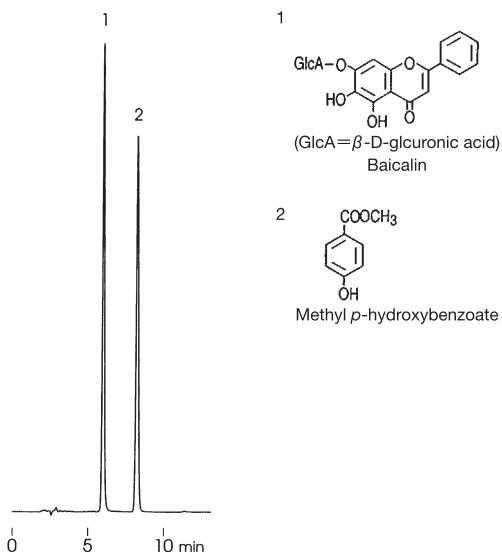
クエルセチンとその配糖体  
Quercetin and its glycosides



(J020828F)

Column : HydroSphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (25/75)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.05 mg/mL)

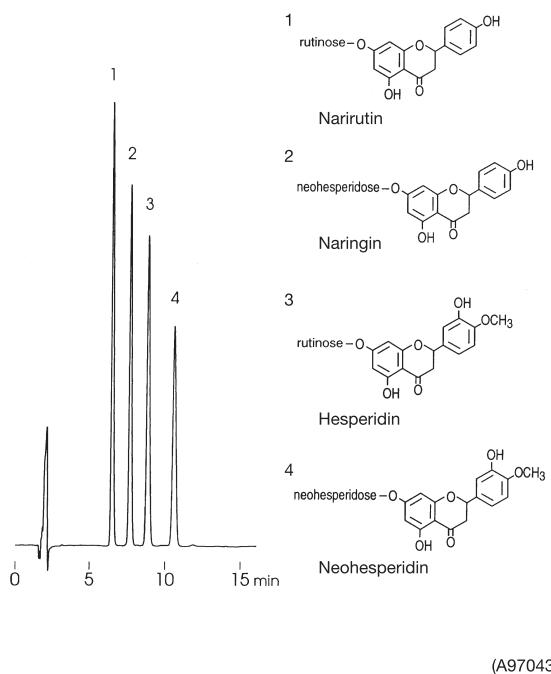
バイカリン  
Baicalin



(S961105C)

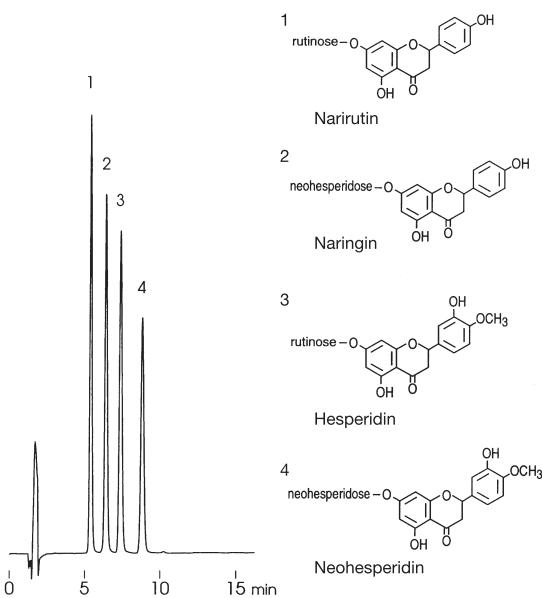
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
50  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (30/70)  
Flow rate : 0.7 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.064 AUFS  
Injection : 10  $\mu$ L (0.01, 0.02 mg/mL)  
(日本薬局方第13改正参照)

フラバノン配糖体  
Flavanone glycosides



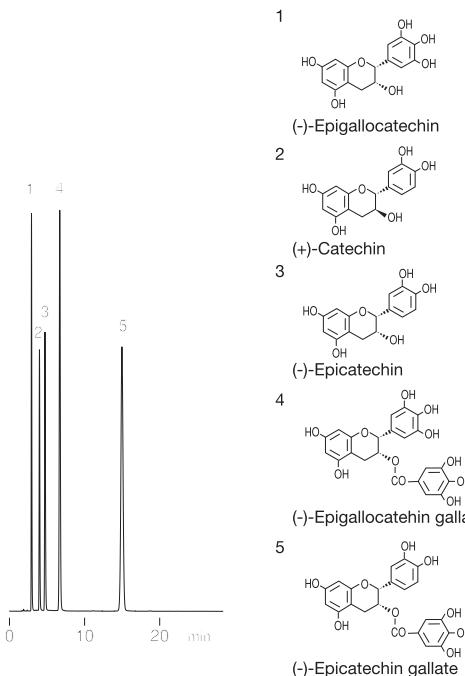
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (20/80)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.04 AUFS  
Injection : 7  $\mu$ L (0.025 mg/mL)

フラバノン配糖体  
Flavanone glycosides



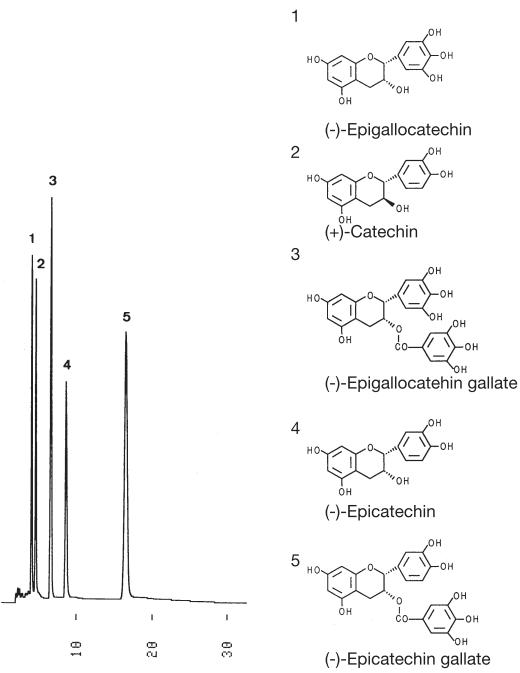
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (20/80)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.04 AUFS  
Injection : 7  $\mu$ L (0.025 mg/mL)

カテキン類  
Catechins

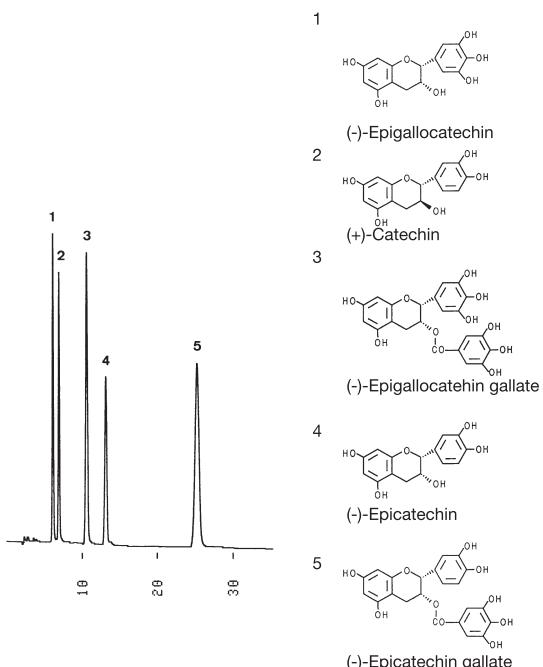


Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/ethyl acetate/water/TFA (9/3/88/0.1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 7  $\mu$ L (0.2 ~ 0.8 mg/mL)

カテキン類  
Catechins

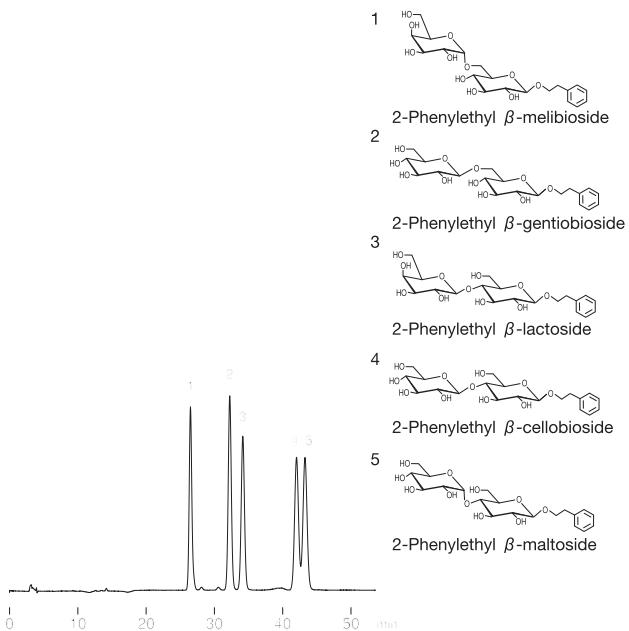


Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.4)/methanol (75/25)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.13 AUFS  
Injection : 8  $\mu$ L (0.1 ~ 0.4 mg/mL)

**カテキン類**  
**Catechins**


(S940122D)

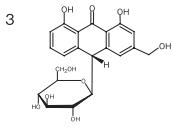
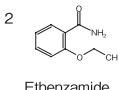
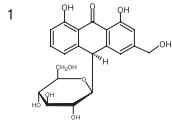
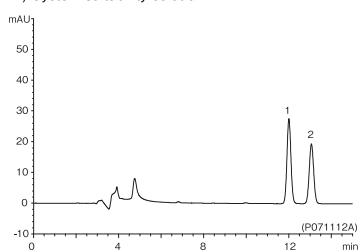
Column	: J'sphere ODS-M80 (4 $\mu$ m, 8 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 2.4)/methanol (75/25)
Flow rate	: 0.8 mL/min
Temperature	: 37 °C
Detection	: UV at 280 nm, 0.13 AUFS
Injection	: 8 $\mu$ L (0.1 ~ 0.4 mg/mL)

**2-フェニルエチルグリコシド**  
**2-Phenylethyl glycosides**


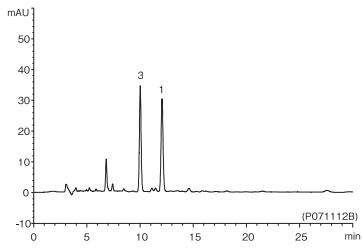
Courtesy of Dr. K. Sakata, Institute for Chemical Research Kyoto University, Japan (F000911A)

**アロエ (日本薬局方15改正分析条件)**  
**Powdered aloe (The Japanese Pharmacopoeia Fifteenth Edition)**

## A) System suitability solution

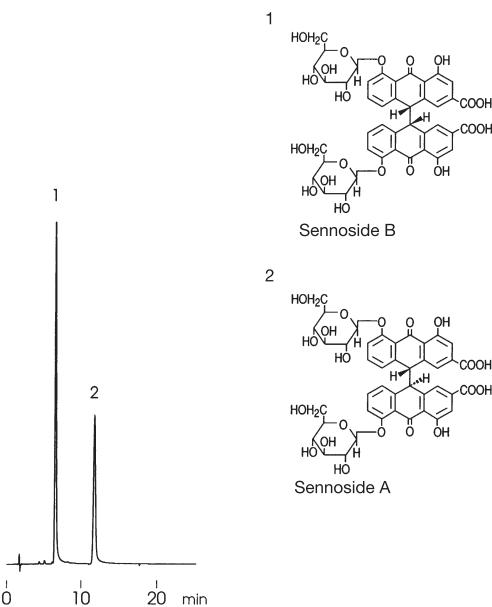


## B) Sample solution (Powdered aloe)



(P080207A)

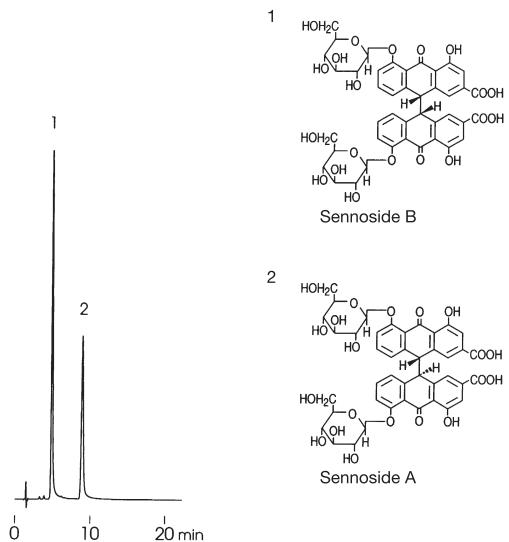
Column	: YMC-Pack Pro C18 (5 $\mu$ m, 12 nm) 150 $\times$ 6.0 mm I.D.
Eluent	: acetonitrile/water/acetic acid (26/74/1)
Flow rate	: 0.9 mL/min
Temperature	: 30 °C
Detection	: A) UV at 300 nm B) UV at 360 nm
Injection	: A) 5 $\mu$ L (50 $\mu$ g/mL) B) 5 $\mu$ L (1 mg/mL)

**センノシド**  
**Sennosides**


(A961126C)

Column	: YMC-Pack Pro C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: methanol/water/acetic acid (30/65/5)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 340 nm, 0.16 AUFS
Injection	: 10 $\mu$ L (0.1 mg/mL)

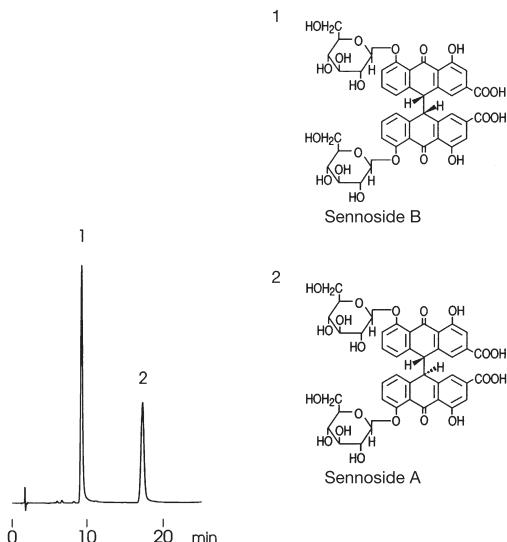
センノシド  
Sennosides



(A961126B)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (30/65/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 340 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.1 mg/mL)

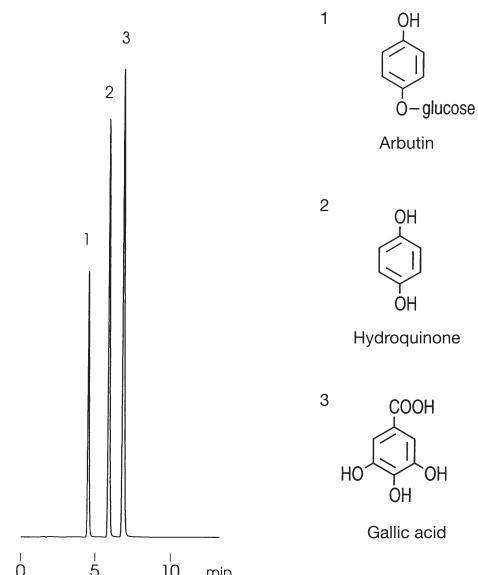
センノシド  
Sennosides



(A961126D)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (30/65/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 340 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.1 mg/mL)

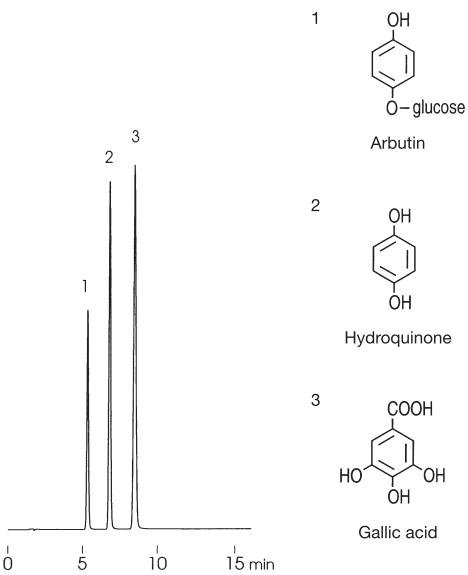
アルブチンおよび関連化合物  
Arbutin and related compounds



(A970514D)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/10 mM H<sub>3</sub>PO<sub>4</sub> (5/95)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 5  $\mu$ L (0.2 ~ 0.5 mg/mL)

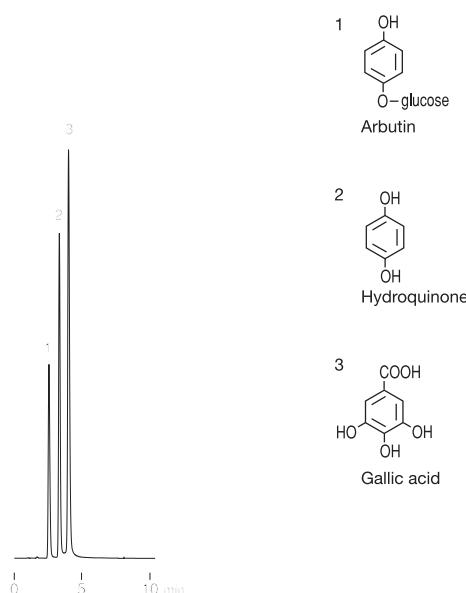
アルブチンおよび関連化合物  
Arbutin and related compounds



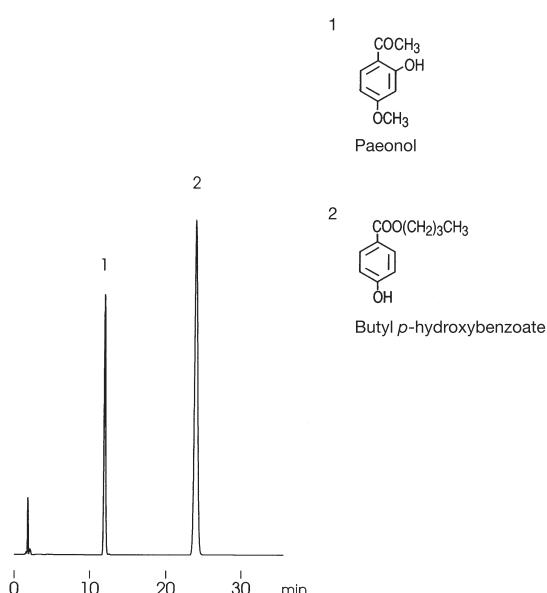
(A970514B)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/10 mM H<sub>3</sub>PO<sub>4</sub> (5/95)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 5  $\mu$ L (0.2 ~ 0.5 mg/mL)

アルブチンおよび関連化合物  
Arbutin and related compounds



ペオノール  
Paeonol



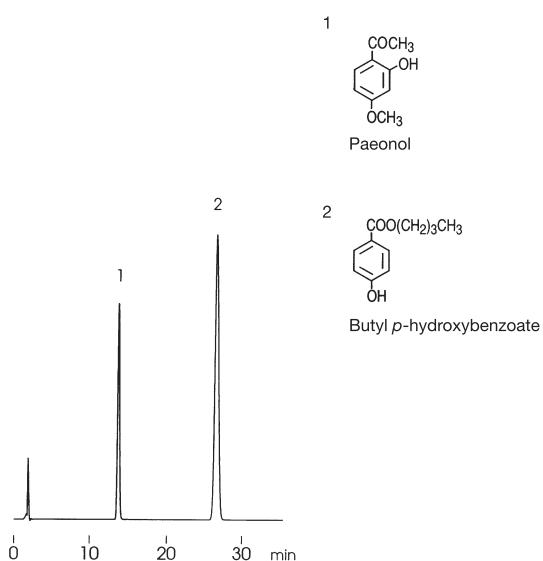
(S971106D)

Column : YMC-Pack Pro C18 (3  $\mu$ m, 12 nm)  
75  $\times$  2.0 mm I.D.  
Eluent : methanol/water/TFA (5/95/0.05)  
Flow rate : 0.2 mL/min  
Temperature : 30 °C  
Detection : UV at 280 nm, 0.16 AUFS  
Injection : 1  $\mu$ L (0.2 ~ 0.5 mg/mL)

(A980831L)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (35/65/2)  
Flow rate : 1.0 mL/min  
Temperature : ambient (22 °C)  
Detection : UV at 274 nm, 0.26 AUFS  
Injection : 10  $\mu$ L (0.04, 0.2 mg/mL)  
(日本薬局方第13改正記載条件)

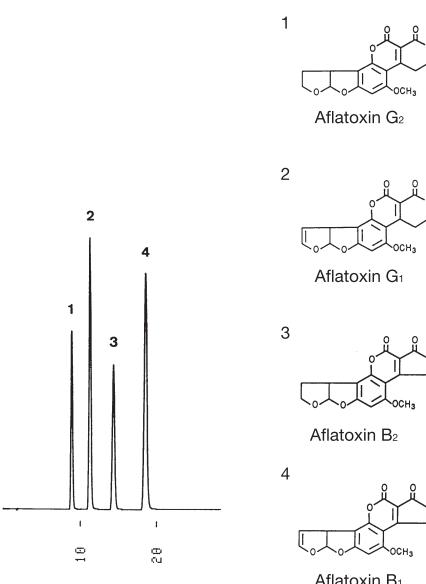
ペオノール  
Paeonol



(S971107A)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (35/65/2)  
Flow rate : 1.0 mL/min  
Temperature : ambient (22 °C)  
Detection : UV at 274 nm, 0.26 AUFS  
Injection : 10  $\mu$ L (0.04, 0.2 mg/mL)  
(日本薬局方第13改正記載条件)

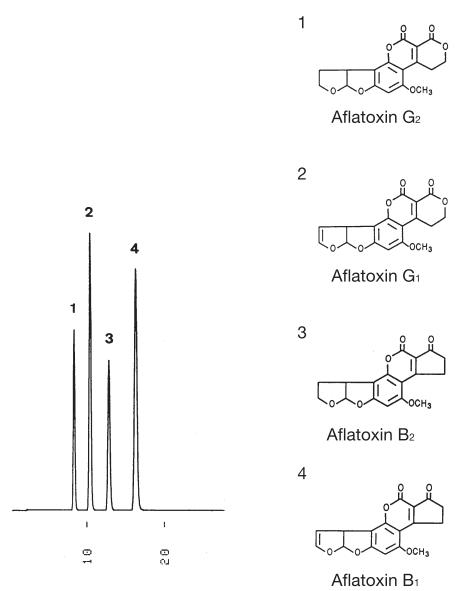
アフラトキシン  
Aflatoxins



(K931124B)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (40/60)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 365 nm, 0.04 AUFS  
Injection : 10  $\mu$ L (7 ~ 10 ppm)

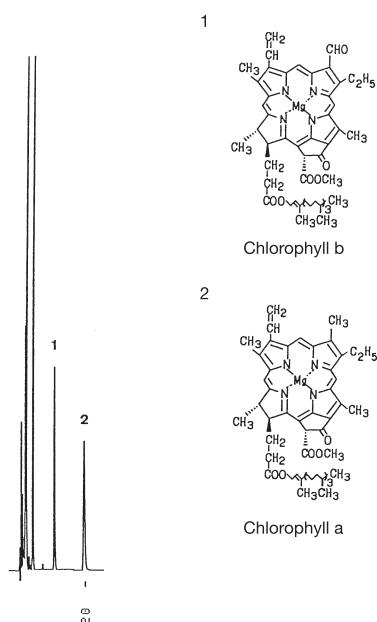
アフラトキシン  
Aflatoxins



(K931125A)

Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : methanol/water (40/60)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 365 nm, 0.04 AUFS  
 Injection : 10  $\mu$ L (7 ~ 10 ppm)

クロロフィル  
Chlorophyll a and b

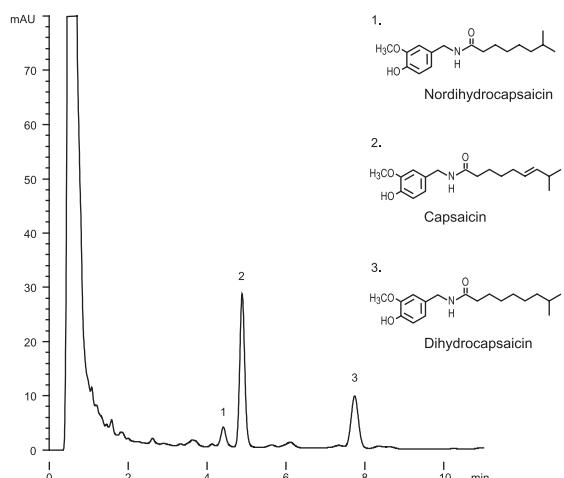


Courtesy of Dr. Toyoaki Aoki, University of Osaka Pref.

(K940228A)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
 150  $\times$  6.0 mm I.D.  
 Eluent : methanol  
 Flow rate : 1.0 mL/min  
 Temperature : ambient  
 Detection : VIS at 450 nm, 1 AUFS  
 Injection : 100  $\mu$ L  
 Sample : extract of Spinacia with acetone/water (90/10)

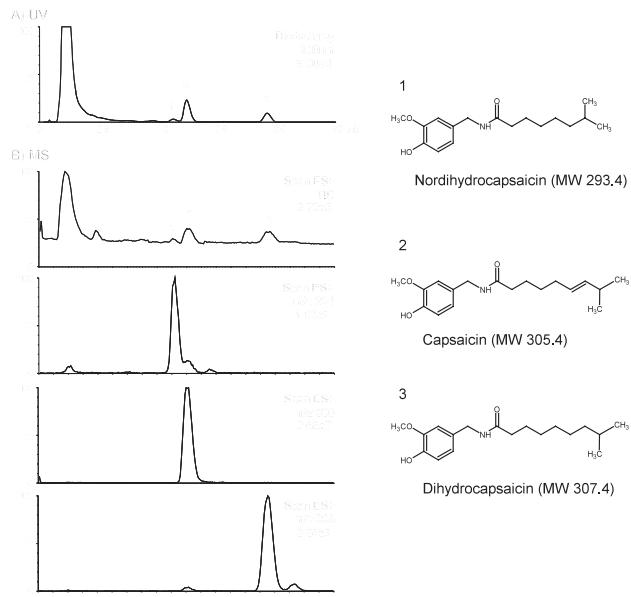
トウガラシ中のカプサイシン類  
Capsaicinoids from red pepper



(F040728C)

Column : YMC-Pack Pro C18 RS (3  $\mu$ m, 8 nm)  
 50  $\times$  4.6 mm I.D.  
 Eluent : methanol/water/acetic acid (60/40/1)  
 Flow rate : 1.0 mL/min  
 Temperature : 40 °C  
 Detection : UV at 280 nm  
 Injection : 1  $\mu$ L (1 g/3 mL)  
 Sample : methanol extract of a commercial cayenne pepper

トウガラシ中のカプサイシン類 - LC/MS  
Capsaicinoids from red pepper - LC/MS

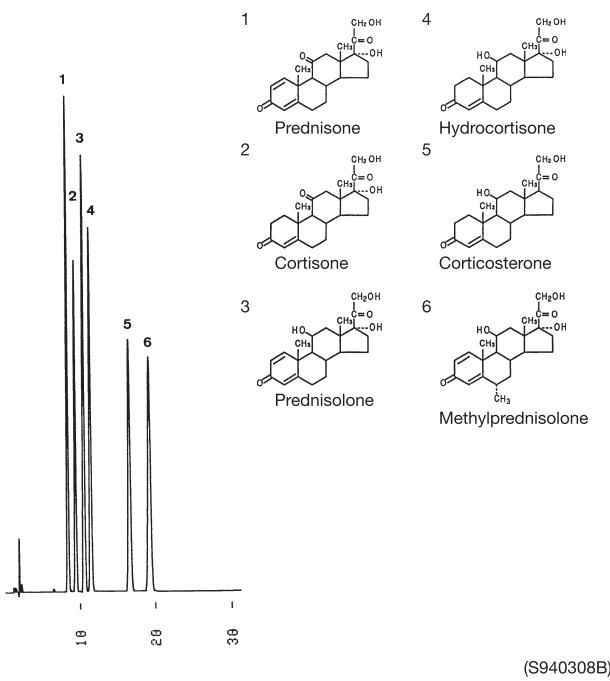


(J040910A)

Column : YMC-Pack Pro C18 RS (3  $\mu$ m, 8 nm)  
 50  $\times$  2.0 mm I.D.  
 Eluent : methanol/water/acetic acid (60/40/0.1)  
 Flow rate : 0.2 mL/min  
 Temperature : 40 °C  
 Detection : A) UV at 280 nm  
 B) ESI positive-mode  
 Injection : 1  $\mu$ L (1 g/3 mL)  
 Sample : methanol extract of a commercial cayenne pepper

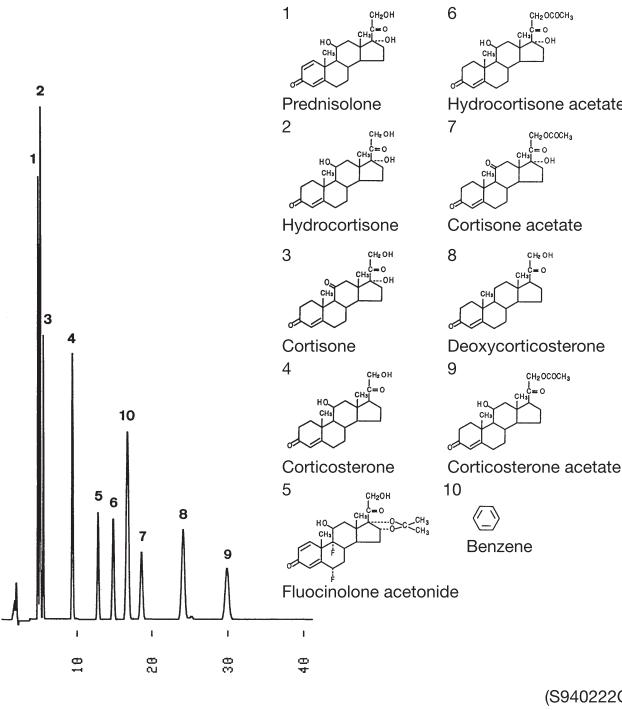
# 8 ステロイド Steroids

## 副腎皮質ステロイド Adrenocorticosteroids



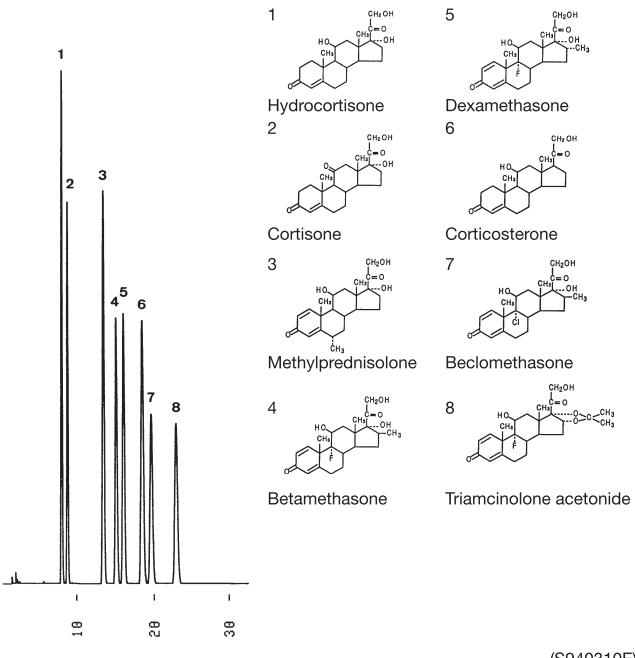
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
           150  $\times$  4.6 mm I.D.  
  Eluent : THF/water (20/80)  
  Flow rate : 1.0 mL/min  
  Temperature : 37 °C  
  Detection : UV at 260 nm, 0.13 AUFS  
  Injection : 8  $\mu$ L (0.1 mg/mL)

## 副腎皮質ステロイド Adrenocorticosteroids



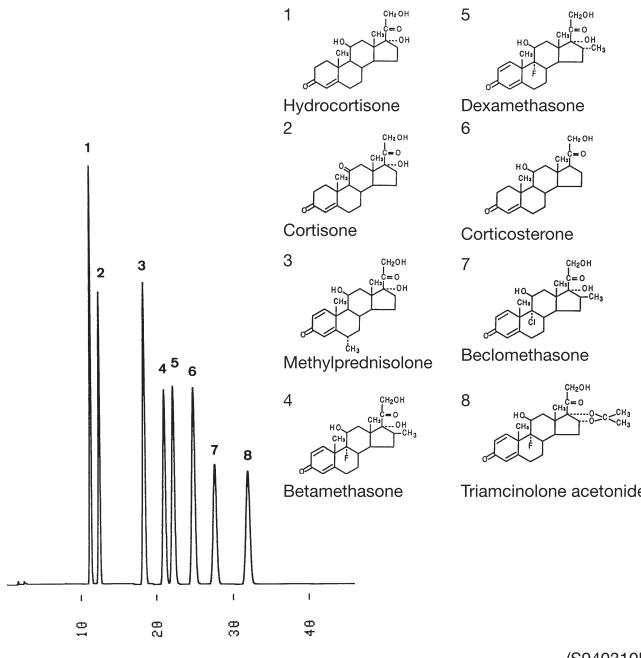
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
           150  $\times$  4.6 mm I.D.  
  Eluent : acetonitrile/water (35/65)  
  Flow rate : 1.0 mL/min  
  Temperature : 37 °C  
  Detection : UV at 260 nm, 0.13 AUFS  
  Injection : 7  $\mu$ L (0.07 mg/mL)

## 副腎皮質ステロイド Adrenocorticosteroids



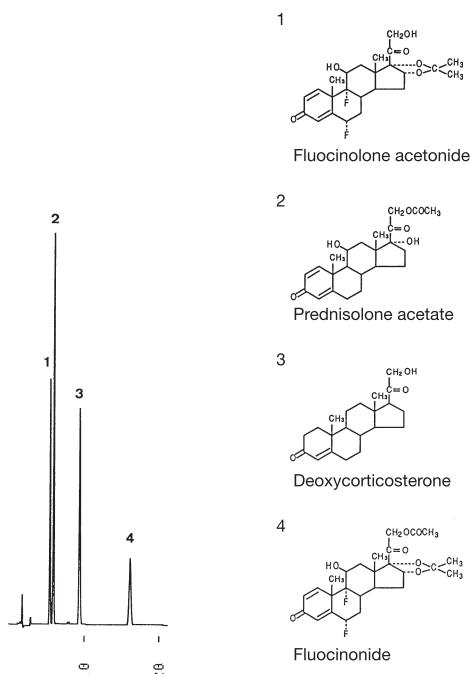
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
           150  $\times$  4.6 mm I.D.  
  Eluent : acetonitrile/water (27/73)  
  Flow rate : 1.0 mL/min  
  Temperature : 37 °C  
  Detection : UV at 260 nm, 0.13 AUFS  
  Injection : 10  $\mu$ L (0.08 mg/mL)

## 副腎皮質ステロイド Adrenocorticosteroids



Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
           150  $\times$  4.6 mm I.D.  
  Eluent : acetonitrile/water (27/73)  
  Flow rate : 1.0 mL/min  
  Temperature : 37 °C  
  Detection : UV at 260 nm, 0.13 AUFS  
  Injection : 10  $\mu$ L (0.08 mg/mL)

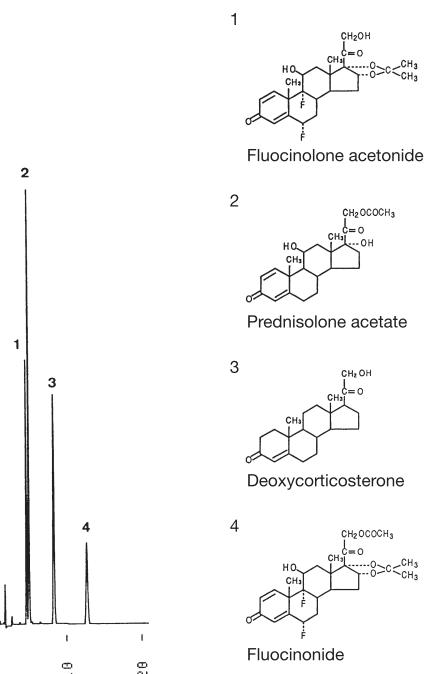
副腎皮質ステロイド  
Adrenocorticosteroids



(O940408A)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (45/55)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 5  $\mu$ L (0.1 mg/mL)

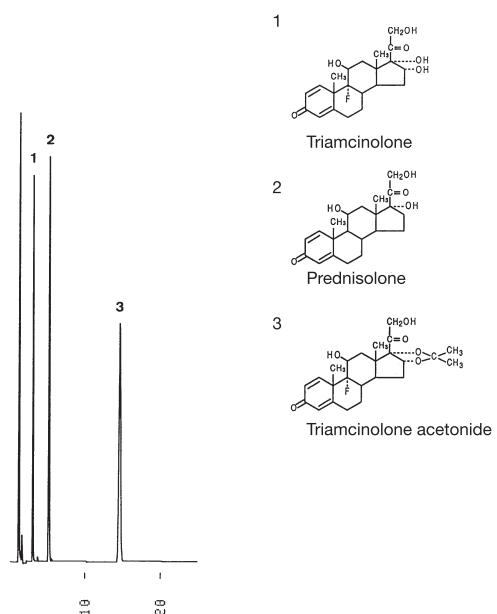
副腎皮質ステロイド  
Adrenocorticosteroids



(O940408C)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (45/55)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 5  $\mu$ L (0.1 mg/mL)

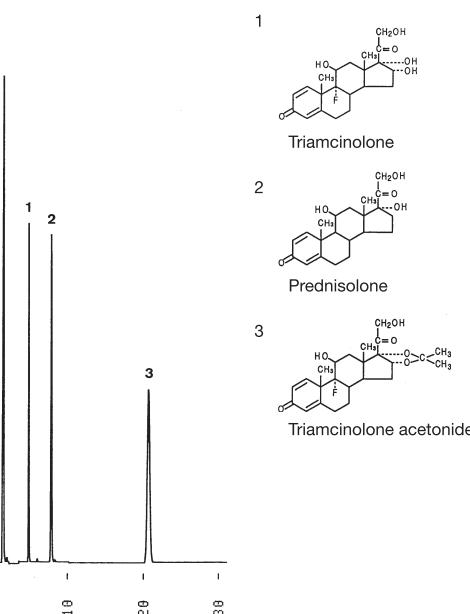
副腎皮質ステロイド  
Adrenocorticosteroids



(S940420B)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 4  $\mu$ L (0.1 ~ 0.2 mg/mL)

副腎皮質ステロイド  
Adrenocorticosteroids

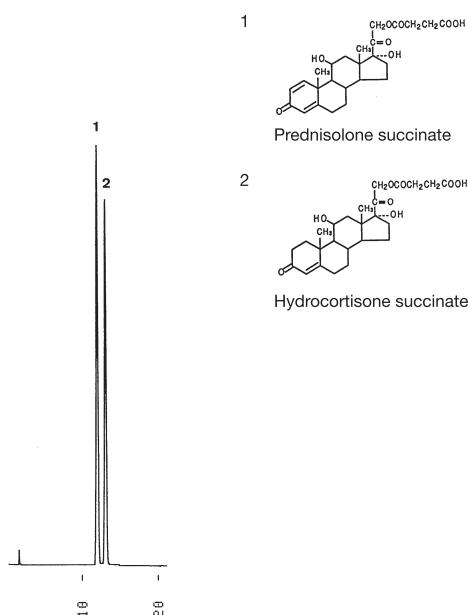


(S940420C)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 4  $\mu$ L (0.1 ~ 0.2 mg/mL)

# 8 ステロイド Steroids

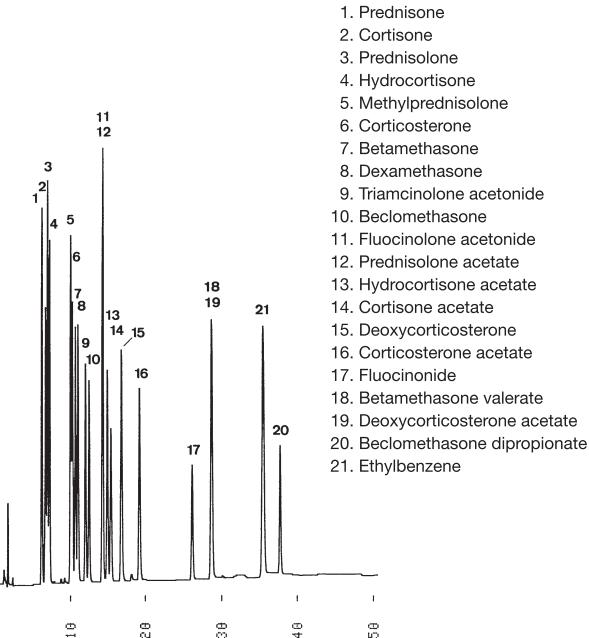
## 副腎皮質ステロイド Adrenocorticosteroids



(S940414A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (30/70/1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.064 AUFS  
Injection : 5  $\mu$ L (0.1 mg/mL)

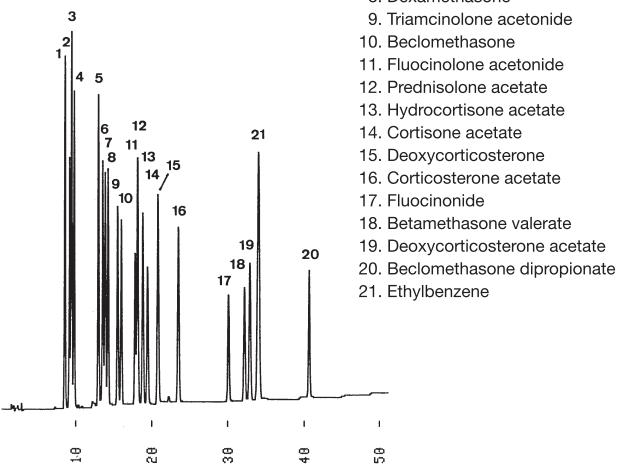
## 副腎皮質ステロイド Adrenocorticosteroids



(S940303D)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) acetonitrile/THF/water (15/10/75)  
B) acetonitrile/water (75/25)  
0-50% B (0-30 min, linear), 50-100% B (30-50 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 10  $\mu$ L (0.045 mg/mL)

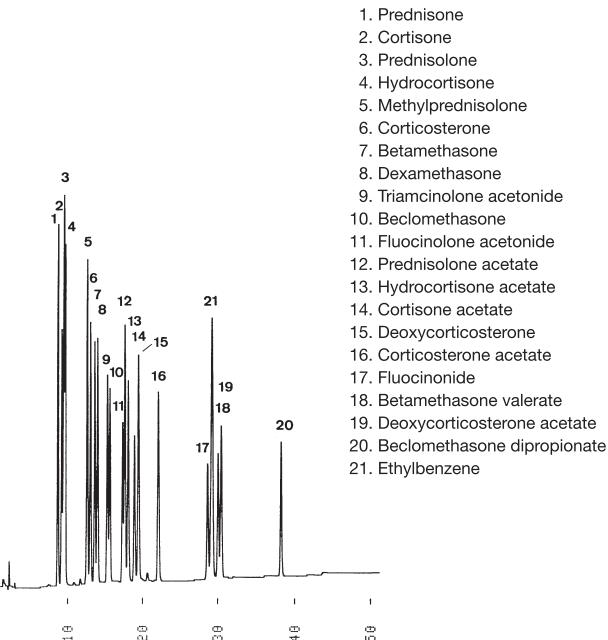
## 副腎皮質ステロイド Adrenocorticosteroids



(S940303B)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) acetonitrile/THF/water (15/10/75)  
B) acetonitrile/water (75/25)  
0-50% B (0-30 min, linear), 50-100% B (30-50 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 10  $\mu$ L (0.045 mg/mL)

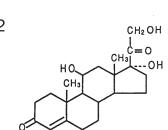
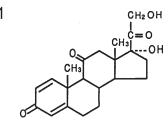
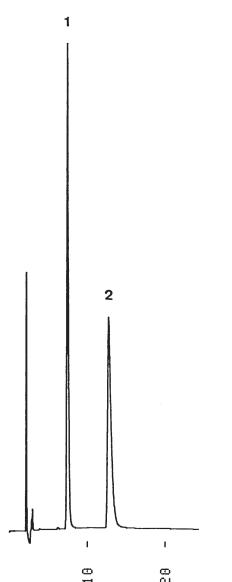
## 副腎皮質ステロイド Adrenocorticosteroids



(S940303C)

Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) acetonitrile/THF/water (15/10/75)  
B) acetonitrile/water (75/25)  
0-50% B (0-30 min, linear), 50-100% B (30-50 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 10  $\mu$ L (0.045 mg/mL)

ヒドロコルチゾンとプレドニゾン  
Hydrocortisone and prednisone



(K940530C)

Column : YMC-Pack SIL (5  $\mu$ m, 12 nm)

150  $\times$  4.6 mm I.D.

Eluent : chloroform/2-propanol/acetic acid (95/5/1)

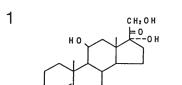
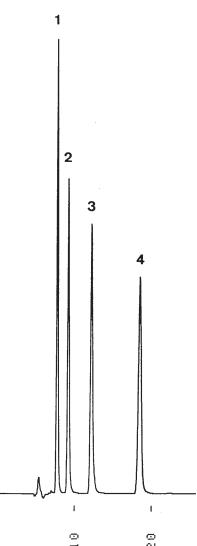
Flow rate : 1.0 mL/min

Temperature : 30 °C

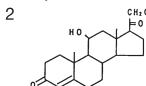
Detection : UV at 250 nm, 0.32 AUFS

Injection : 10  $\mu$ L (0.25 mg/mL)

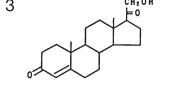
ステロイド  
Steroids



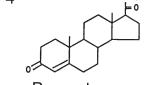
Hydrocortisone



Corticosterone



Deoxycorticosterone



Progesterone

(S930322B)

Column : YMC-Pack CN (5  $\mu$ m, 12 nm)

250  $\times$  4.6 mm I.D.

Eluent : acetonitrile/water (40/60)

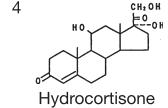
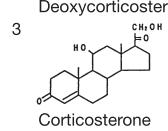
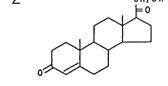
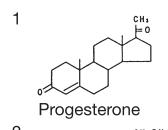
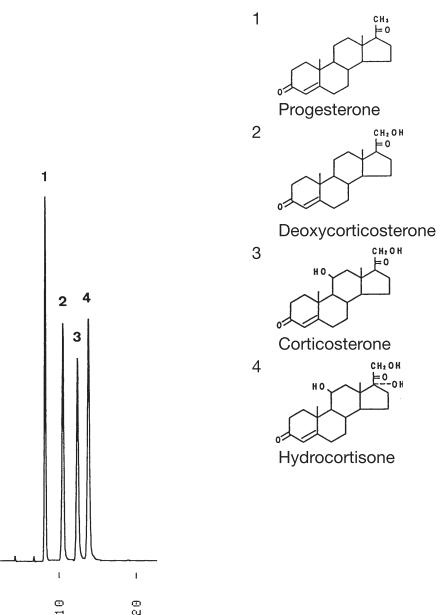
Flow rate : 0.6 mL/min

Temperature : 30 °C

Detection : UV at 254 nm, 0.32 AUFS

Injection : 3  $\mu$ L (0.25 mg/mL)

ステロイド  
Steroids



(S930319D)

Column : YMC-Pack CN (5  $\mu$ m, 12 nm)

250  $\times$  4.6 mm I.D.

Eluent : hexane/methanol/dichloromethane (75/20/5)

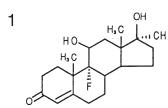
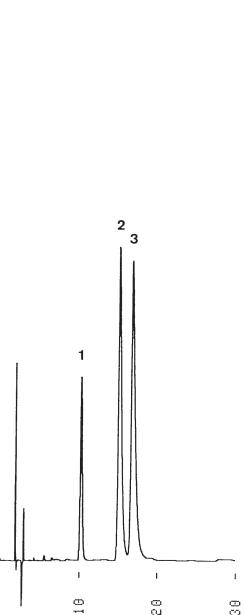
Flow rate : 0.6 mL/min

Temperature : 30 °C

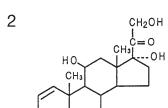
Detection : UV at 254 nm, 0.32 AUFS

Injection : 3  $\mu$ L (0.25 mg/mL)

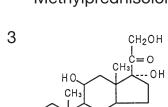
ステロイド  
Steroids



Fluoxymesterone



Methylprednisolone



Prednisolone

(K940602B)

Column : YMC-Pack SIL-06 (5  $\mu$ m, 6 nm)

250  $\times$  4.6 mm I.D.

Eluent : hexane/THF/acetic acid (60/40/1)

Flow rate : 1.5 mL/min

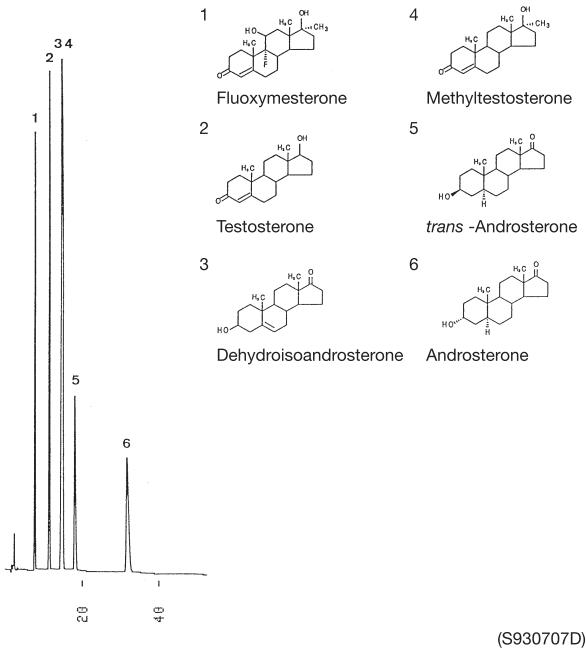
Temperature : 30 °C

Detection : UV at 250 nm, 0.16 AUFS

Injection : 10  $\mu$ L (0.25 mg/mL)

# 8 ステロイド Steroids

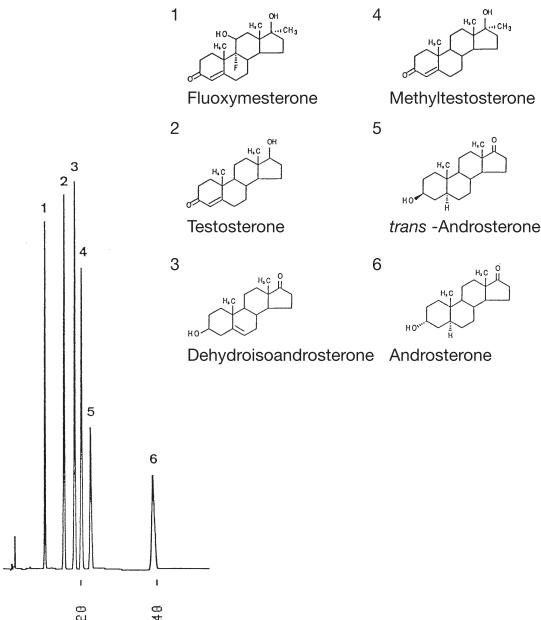
## 男性ホルモン Androgens



(S930707D)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/acetonitrile/water (45/15/40)  
Flow rate : 0.8 mL/min  
Temperature : 30 °C  
Detection : UV at 210 nm, 0.064 AUFS  
Injection : 10  $\mu$ L (0.1 ~ 2.0 mg/mL)

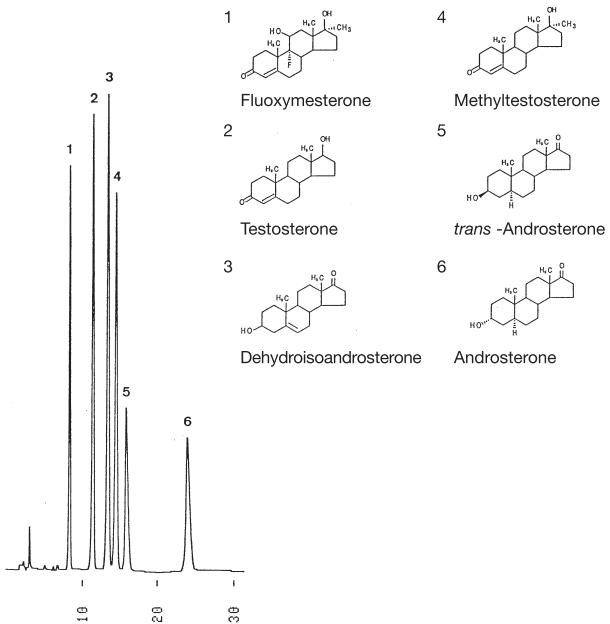
## 男性ホルモン Androgens



(S930707C)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/acetonitrile/water (45/15/40)  
Flow rate : 0.8 mL/min  
Temperature : 30 °C  
Detection : UV at 210 nm, 0.064 AUFS  
Injection : 10  $\mu$ L (0.1 ~ 2.0 mg/mL)

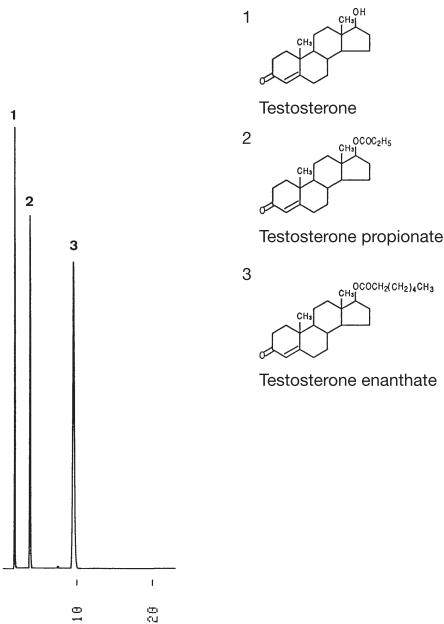
## 男性ホルモン Androgens



(S930706G)

Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/acetonitrile/water (45/15/40)  
Flow rate : 0.8 mL/min  
Temperature : 30 °C  
Detection : UV at 210 nm, 0.064 AUFS  
Injection : 10  $\mu$ L (0.1 ~ 2.0 mg/mL)

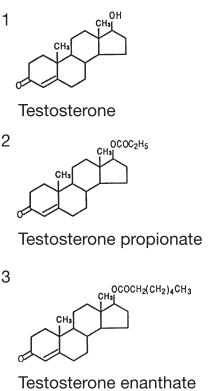
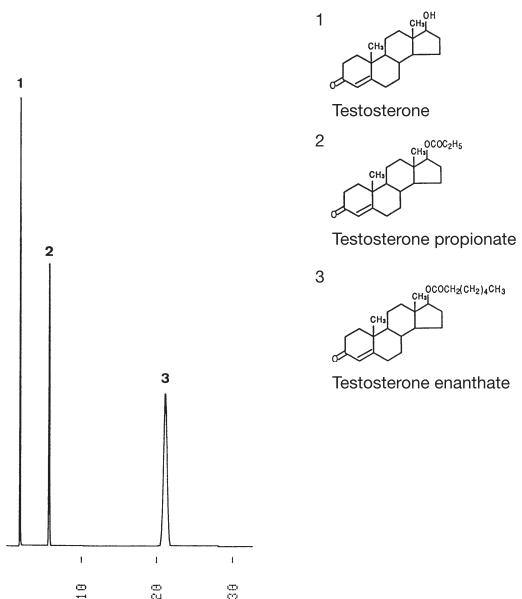
## テストステロン誘導体 Synthetic androgens



(S940412B)

Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 5  $\mu$ L (0.1 ~ 0.25 mg/mL)

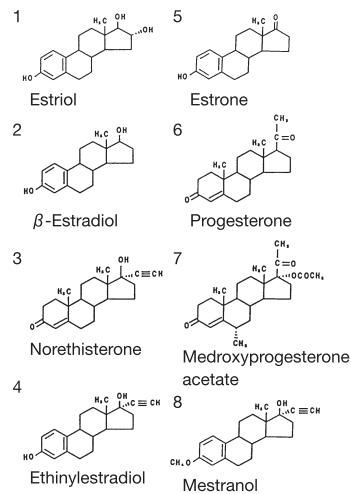
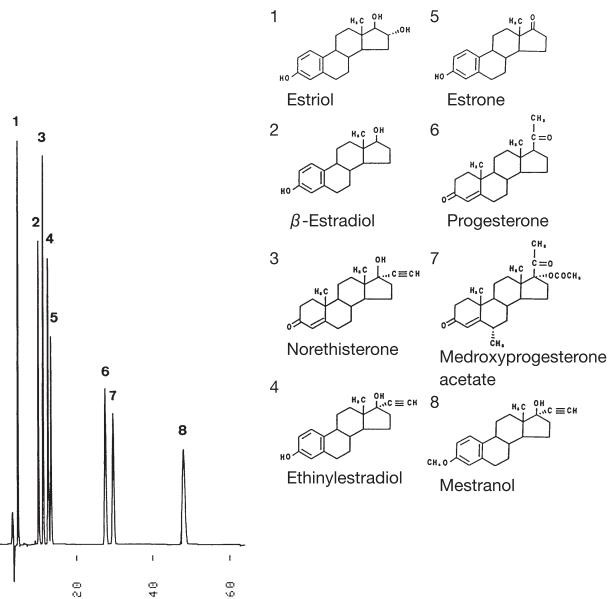
テストステロン誘導体  
Synthetic androgens



(S940412C)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 5  $\mu$ L (0.1 ~ 0.25 mg/mL)

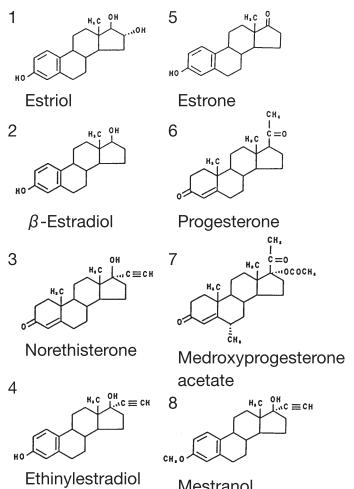
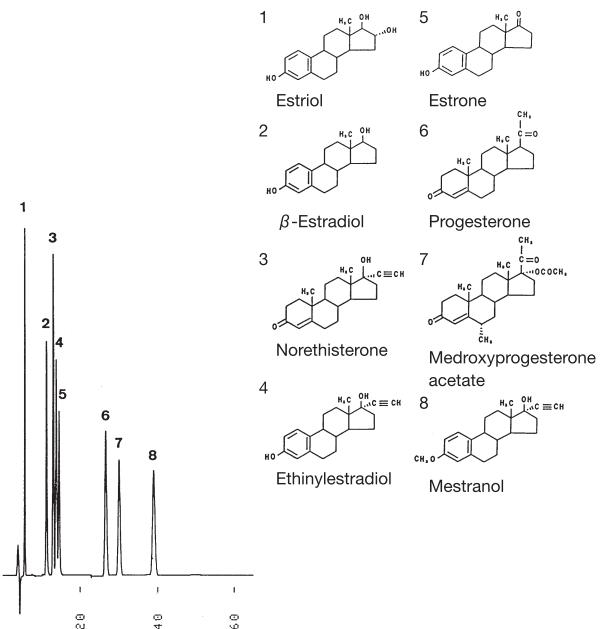
女性ホルモン  
Estrogens and progestins



(S930311D)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/THF/water (46/4/50)  
Flow rate : 0.7 mL/min  
Temperature : 30 °C  
Detection : UV at 230 nm, 0.16 AUFS  
Injection : 7  $\mu$ L (0.1 mg/mL)

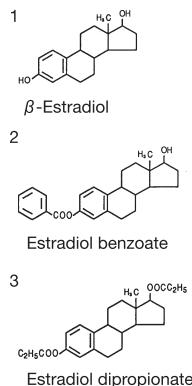
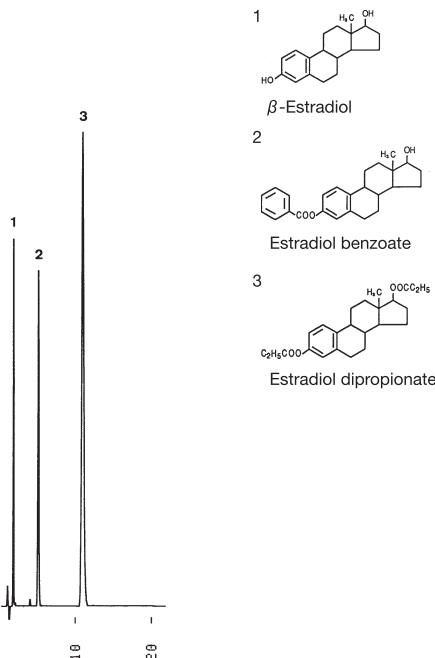
女性ホルモン  
Estrogens and progestins



(S930312C)

Column : YMC-Pack C<sub>8</sub> (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/THF/water (46/4/50)  
Flow rate : 0.7 mL/min  
Temperature : 30 °C  
Detection : UV at 230 nm, 0.16 AUFS  
Injection : 7  $\mu$ L (0.1 mg/mL)

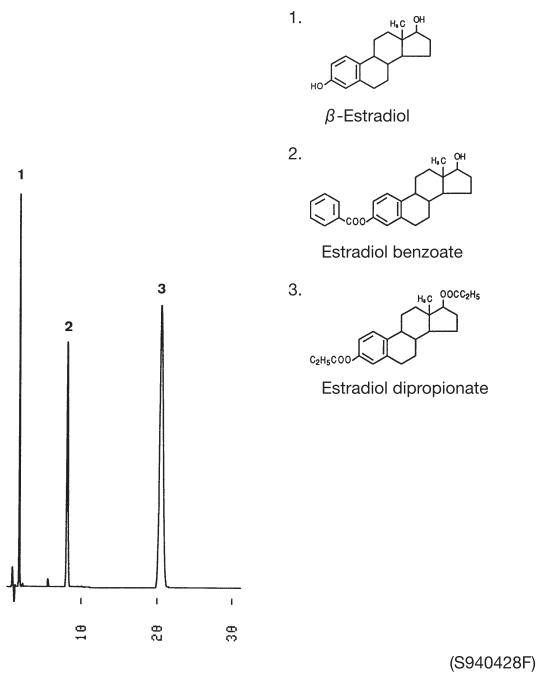
エストラジオール誘導体  
Estrogens



(S940428E)

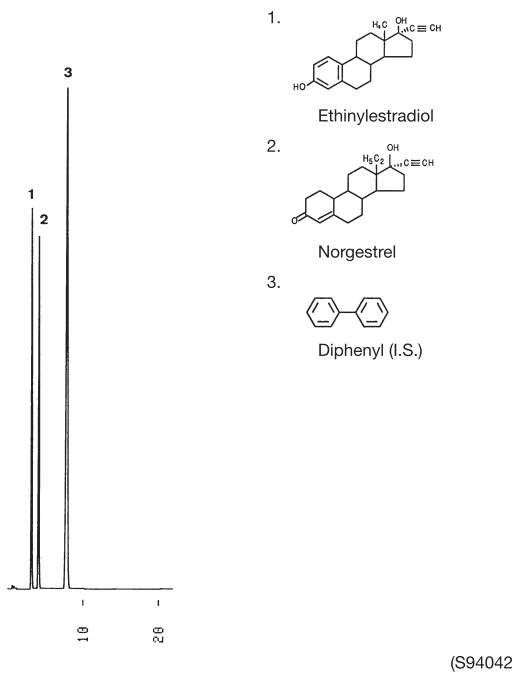
Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (65/35)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.13 AUFS  
Injection : 6  $\mu$ L (0.08 ~ 0.5 mg/mL)

エストラジオール誘導体  
Estrogens



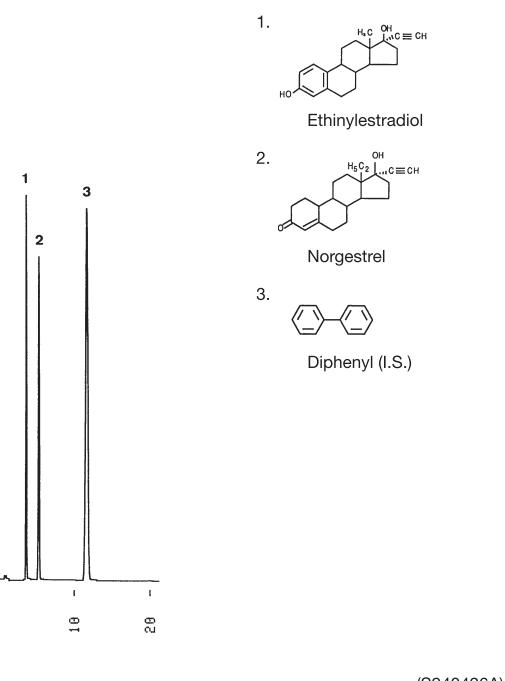
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (65/35)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.13 AUFS  
Injection : 6  $\mu$ L (0.08 ~ 0.5 mg/mL)

ノルゲストレルとエチニルエストラジオール  
Norgestrel and ethynodiol diacetate



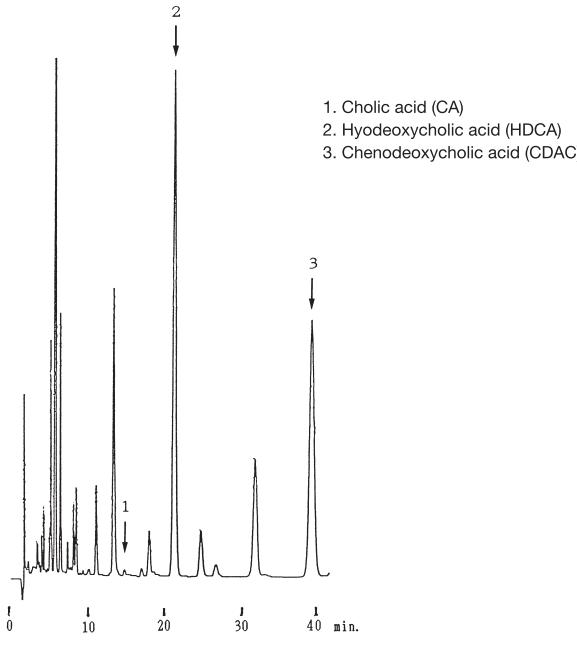
Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (50/50)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.13 AUFS  
Injection : 6  $\mu$ L (0.05 ~ 0.1 mg/mL)

ノルゲストレルとエチニルエストラジオール  
Norgestrel and ethynodiol diacetate



Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (50/50)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.13 AUFS  
Injection : 6  $\mu$ L (0.05 ~ 0.1 mg/mL)

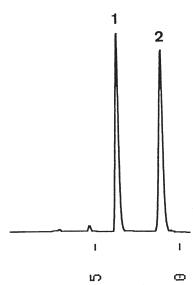
トンタン(豚胆)中の胆汁酸のフェナシルエステル誘導体  
Phenacyl esters of bile acids from pig gall



Column : YMC-Pack ODS-AL (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (60/40)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 240 nm, 0.04 AUFS  
Sample : extract of pig gall were derivatized with phenacyl bromide  
Injection : 5  $\mu$ L

エクダイソーン  
Ecdysones

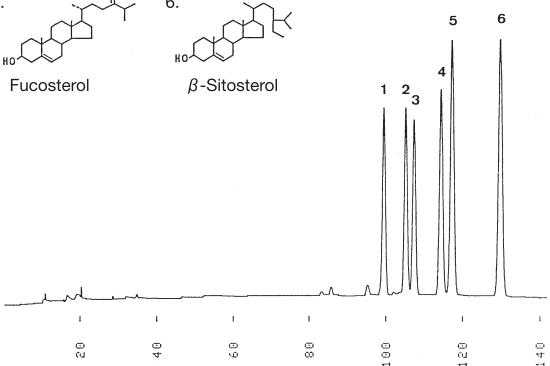
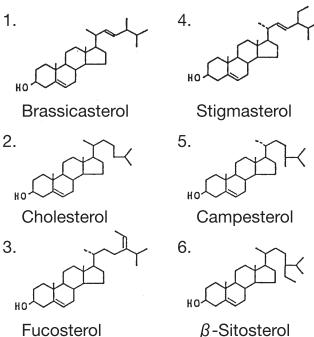
1.  $\beta$ -Ecdysone  
2.  $\alpha$ -Ecdysone



Courtesy of Dr.Furusawa, Kyoto Institute of Technology, Japan (G910523H)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/methanol/water (5/50/45)  
Flow rate : 0.5 mL/min  
Temperature : ambient  
Detection : UV at 254 nm, 0.04 AUFS  
Injection : 5  $\mu$ L (0.04 mg/mL)

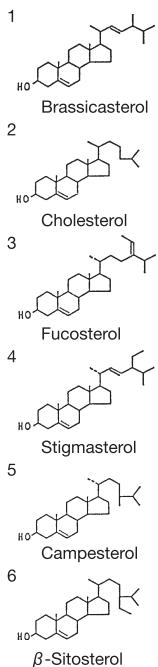
ステロール  
Sterols



(O940701C)

Column : YMC-Pack ODS-AL (5  $\mu$ m, 12 nm) + ODS-AL + J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
(250  $\times$  4.6 mm I.D.)  $\times$  4  
Eluent : methanol/water (100/2)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.4 ~ 1 mg/mL)

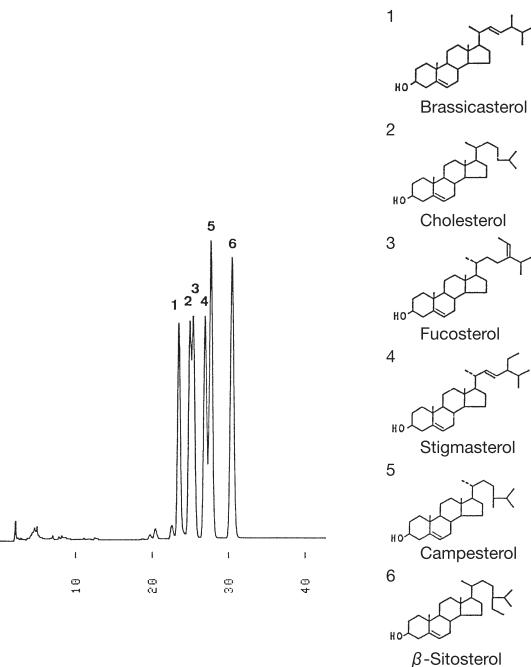
ステロール  
Sterols



(O940706H)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : methanol/water (100/2)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.64 AUFS  
Injection : 10  $\mu$ L (0.4 ~ 1 mg/mL)

ステロール  
Sterols

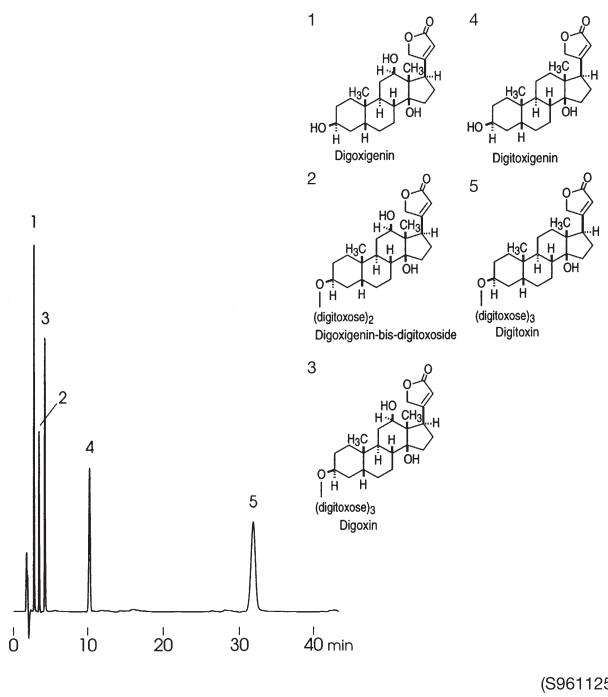


(O940706C)

Column : YMC-Pack ODS-AL (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : methanol/water (100/2)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.4 ~ 1 mg/mL)

強心配糖体

Cardiac glycosides

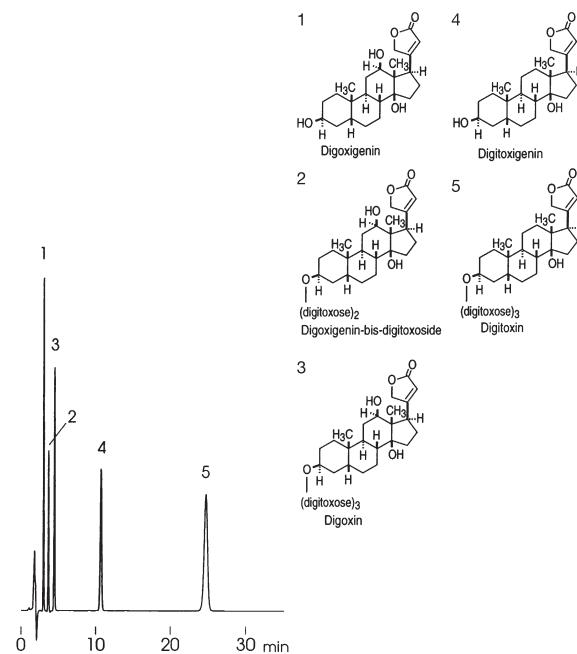


(S961125B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.13 AUFS  
Injection : 4  $\mu$ L (0.05 ~ 0.2 mg/mL)

強心配糖体

Cardiac glycosides

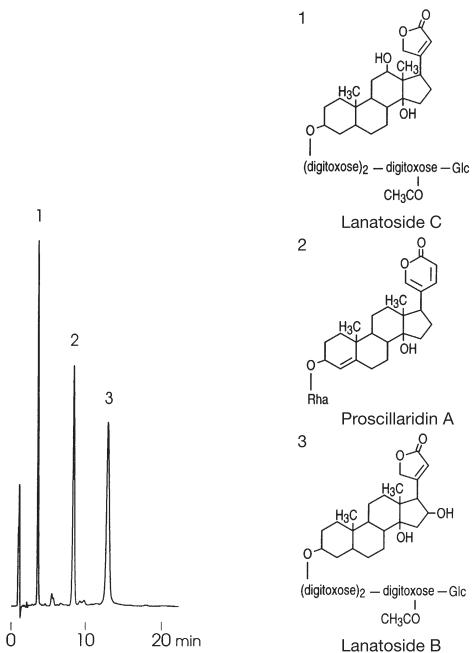


(S961126F)

Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.13 AUFS  
Injection : 4  $\mu$ L (0.05 ~ 0.2 mg/mL)

強心配糖体

Cardiac glycosides

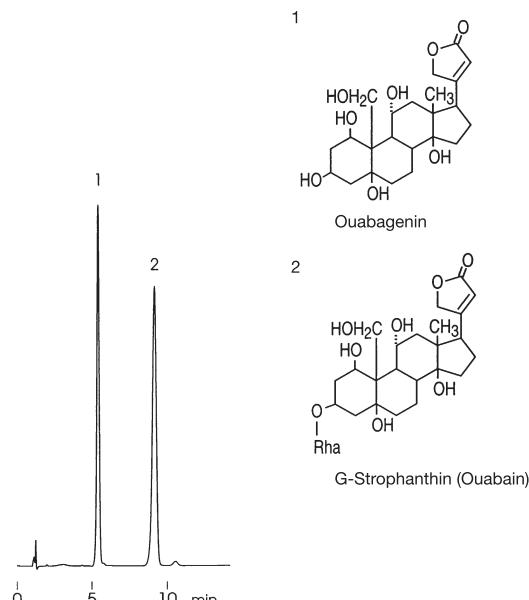


(S961129G)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.13 AUFS  
Injection : 8  $\mu$ L (0.1 ~ 0.2 mg/mL)

強心配糖体

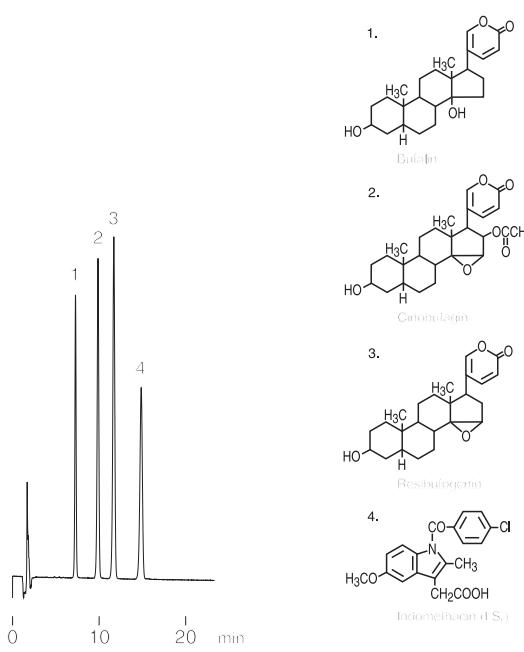
Cardiac glycosides



(S961129I)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (10/90)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.26 AUFS  
Injection : 5  $\mu$ L (0.2, 0.4 mg/mL)

センソ成分  
Steroids from toad venom



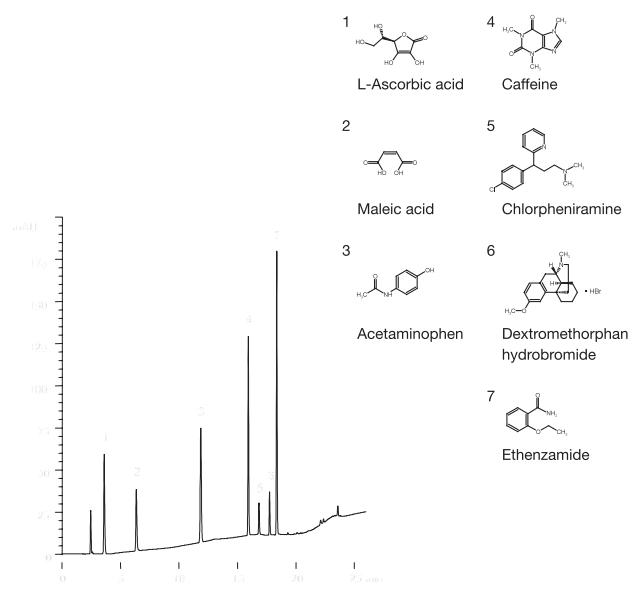
(S010806A)

Column	: YMC-Pack ODS-AL (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: acetonitrile/0.1% phosphoric acid (45/55)
Flow rate	: 1.0 mL/min
Temperature	: 40 °C
Detection	: UV at 300 nm, 0.08 AUFS
Injection	: 10 $\mu$ L (0.04 ~ 0.08 mg/mL)

(日本薬局方第14改正記載条件)

### 風邪薬成分

#### Ingredients in a cough/cold medication

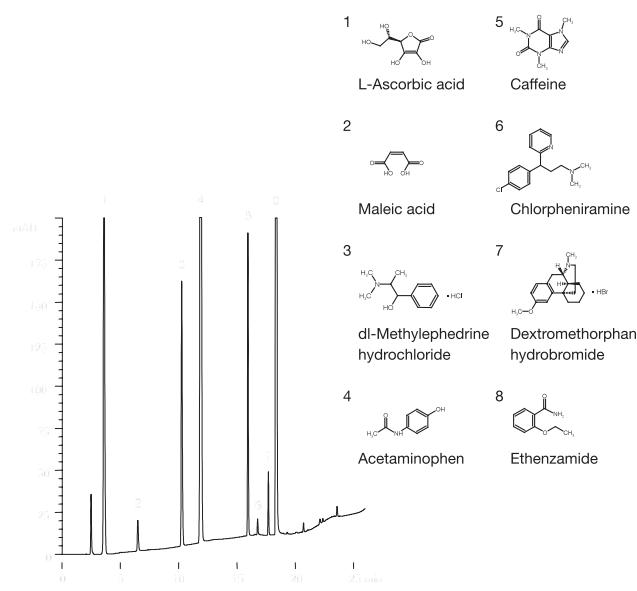


(F040616A)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 2.5) B) methanol 0-20% B (0-10 min), 20-90% B (10-20 min), 90% B (20-25 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 210 nm (0-13 min), UV at 235 nm (13-25 min)
Injection	: 10 $\mu$ L (12.5 ~ 50.0 $\mu$ g/mL)

### 市販風邪薬

#### A commercial cough/cold medication

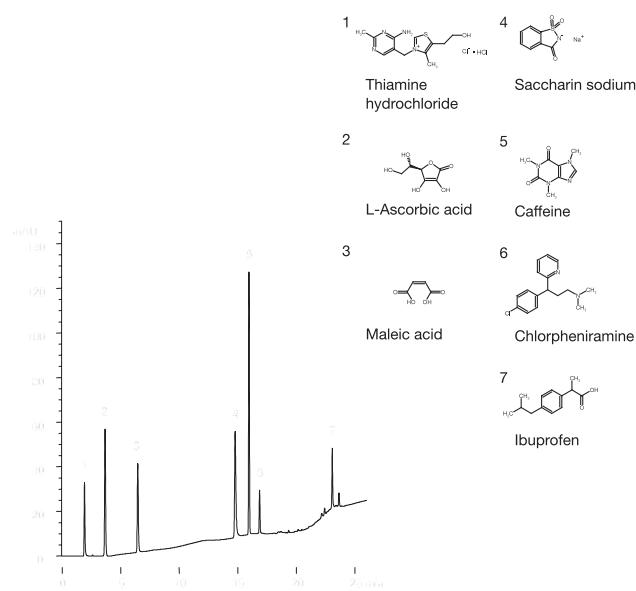


(F040616B)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 2.5) B) methanol 0-20% B (0-10 min), 20-90% B (10-20 min), 90% B (20-25 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 210 nm (0-13 min), UV at 235 nm (13-25 min)
Injection	: 15 $\mu$ L (1.5 mg/mL)
Sample	: 70% methanol extract of a commercially available cough/cold medication

### 風邪薬成分

#### Ingredients in a cough/cold medication

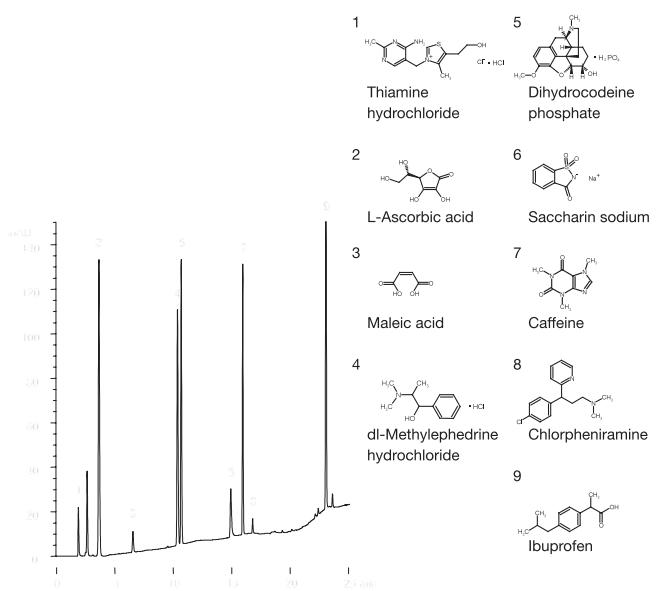


(F040524A)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 2.5) B) methanol 0-20% B (0-10 min), 20-90% B (10-20 min), 90% B (20-25 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 210 nm (0-12 min), UV at 235 nm (12-25 min)
Injection	: 10 $\mu$ L (12.5 ~ 50.0 $\mu$ g/mL)

### 市販風邪薬

#### A commercial cough/cold medication

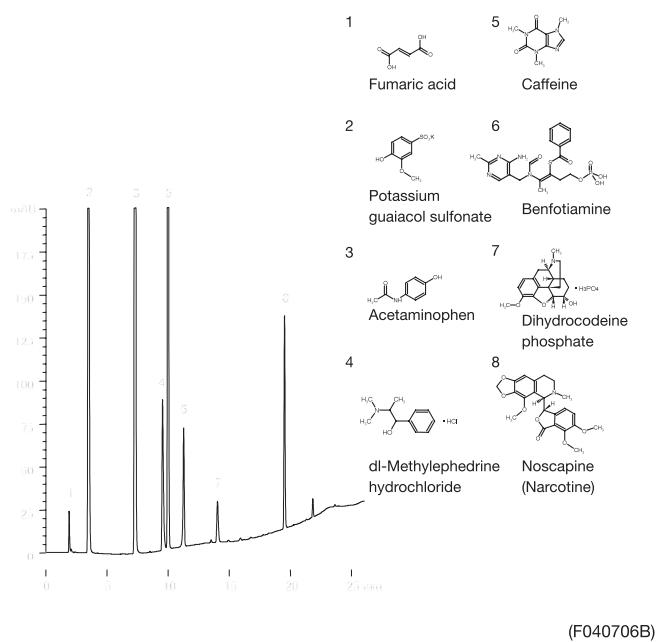


(F040524B)

Column	: Hydrosphere C18 (5 $\mu$ m, 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 2.5) B) methanol 0-20% B (0-10 min), 20-90% B (10-20 min), 90% B (20-25 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 210 nm (0-12 min), UV at 235 nm (12-25 min)
Injection	: 15 $\mu$ L (1.5 mg/mL)
Sample	: 70% methanol extract of a commercially available cough/cold medication

市販風邪薬

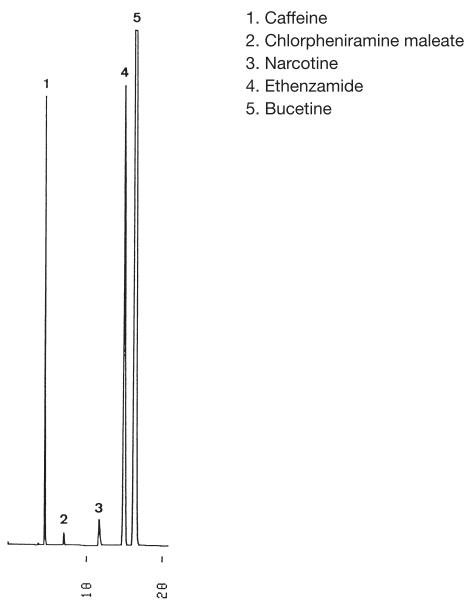
A commercial cough/cold medication



Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : A) 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)  
 B) methanol  
 5-95% B (0-20 min), 95% B (20-25 min)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 215 nm (0-13 min), UV at 235 nm (13-25 min)  
 Injection : 2  $\mu$ L (15 mg/mL)  
 Sample : 70% methanol extract of a commercially available cough/cold medication

市販風邪薬

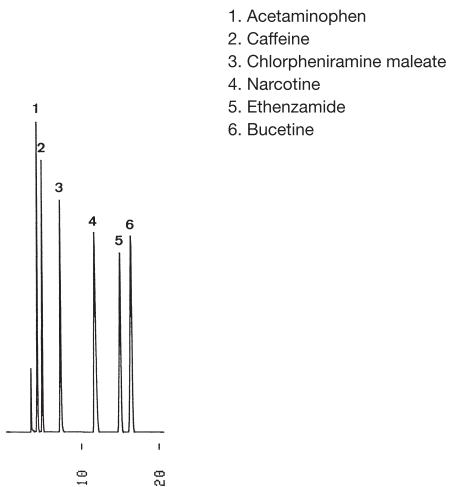
A commercial cough/cold medication



Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
 250  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/methanol/0.1% phosphoric acid (18/15/77)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : UV at 254 nm, 0.08 AUFS  
 Injection : 3  $\mu$ L (10 mg/mL)  
 Sample : an extract from a commercially available cough/cold preparation

風邪薬成分

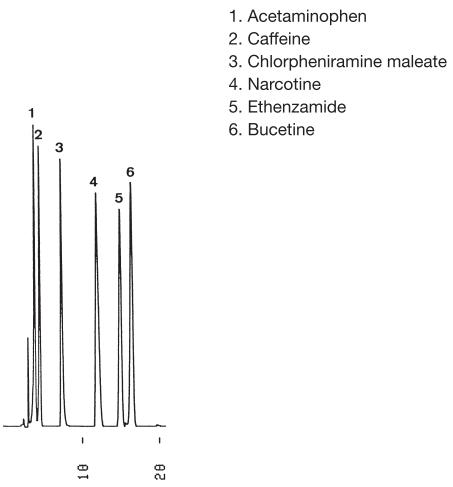
Ingredients in a cough/cold medication



Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
 250  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/methanol/0.1% phosphoric acid (18/15/77)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : UV at 254 nm, 0.08 AUFS  
 Injection : 10  $\mu$ L (0.02 ~ 0.22 mg/mL)

風邪薬成分

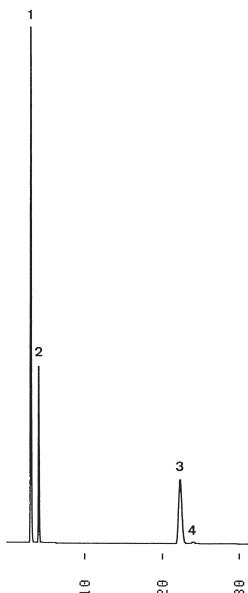
Ingredients in a cough/cold medication



Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
 150  $\times$  6.0 mm I.D.  
 Eluent : acetonitrile/methanol/0.1% phosphoric acid (18/15/77)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : UV at 254 nm, 0.08 AUFS  
 Injection : 17  $\mu$ L (0.02 ~ 0.22 mg/mL)



市販鎮痛解熱剤  
Pain-killing drug



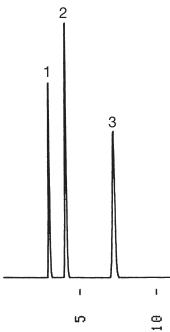
1. Acetaminophen
2. Caffeine
3. Ethenzamide
4. Bromovalerylurea

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/0.1% phosphoric acid (3/17)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 5  $\mu$ L

(G900727D)

インドメタシン  
Indometacin

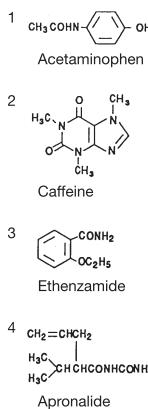
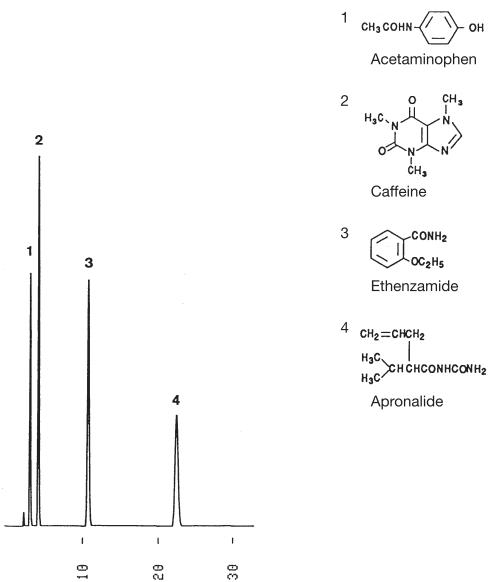
1. *p*-Chlorobenzoic acid
2. *p*-Hydroxybenzoic acid *n*-butyl ester
3. Indometacin



(G900727F)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/0.1% phosphoric acid (70/30)  
Flow rate : 1.3 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm, 0.64 AUFS  
Injection : 20  $\mu$ L  
(日本薬局方第12改正記載条件)

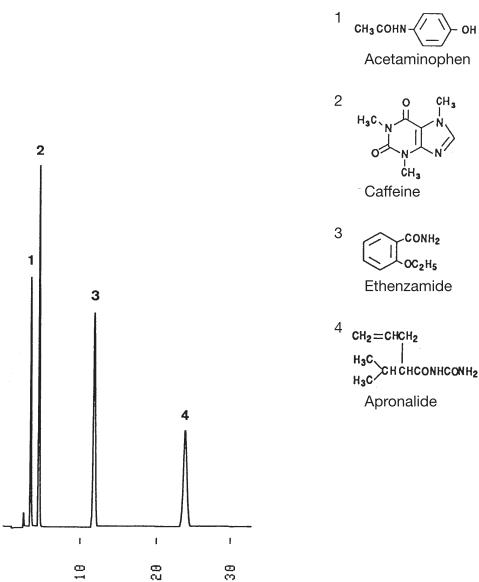
解熱鎮痛薬成分  
Analgesics



(S930422D)

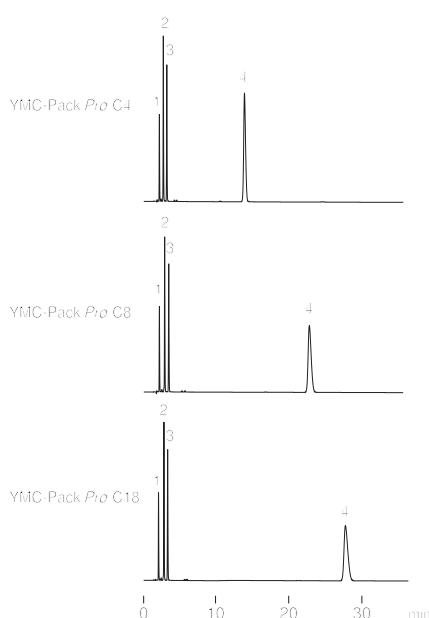
Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (40/60)  
Flow rate : 0.7 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.51 AUFS  
Injection : 5  $\mu$ L (0.2 ~ 2.0 mg/mL)

解熱鎮痛薬成分  
Analgesics



Column : YMC-Pack C<sub>8</sub> (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (40/60)  
Flow rate : 0.7 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.51 AUFS  
Injection : 5  $\mu$ L (0.2 ~ 2.0 mg/mL)

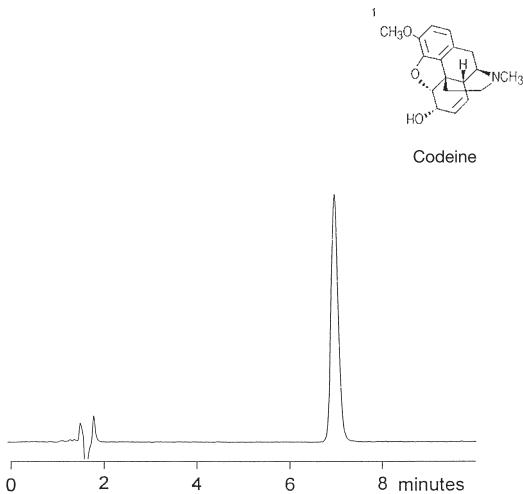
解熱鎮痛薬  
Pain-killing drugs



(A001019B)

Column : YMC-Pack Pro C4, Pro C8 and Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/20 mM H<sub>3</sub>PO<sub>4</sub> (60/40)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.01 ~ 2.0 mg/mL)

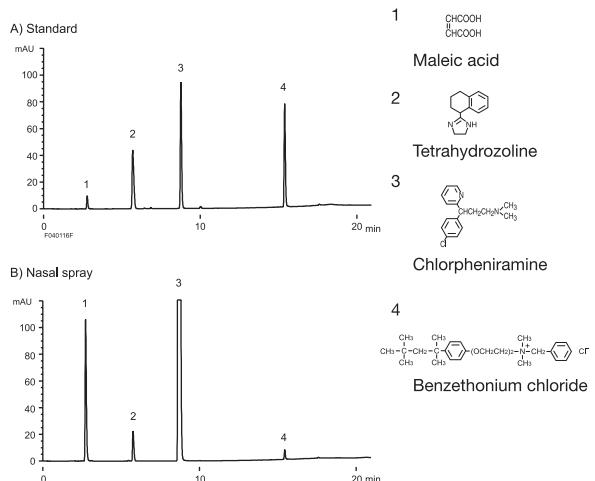
コデイン  
Codeine



(J010528A)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/0.05% TFA (10/90)  
Flow rate : 1.5 mL/min  
Detection : UV at 210 nm  
Injection : 5  $\mu$ L (0.1 mg/mL)

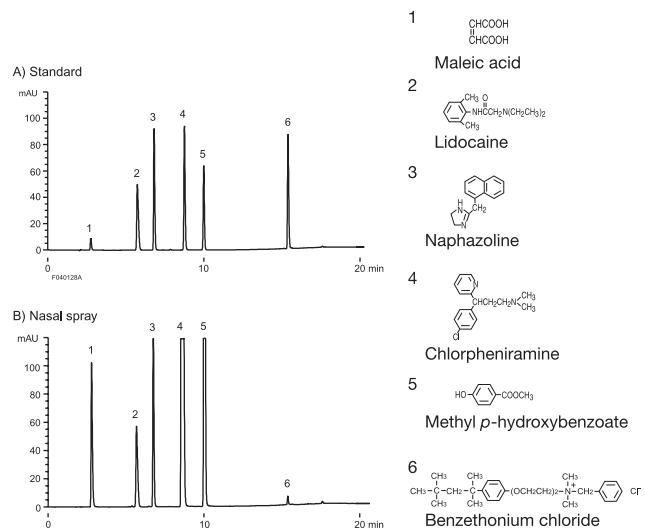
市販点鼻薬  
A commercial nasal spray



(F040119A)

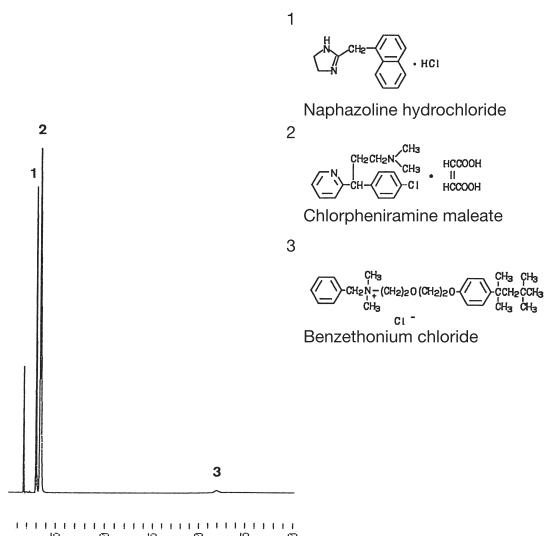
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) 20 mM KH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.5)  
B) methanol  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm  
Injection : A) 5  $\mu$ L (0.1 ~ 0.7 mg/mL)  
B) 3  $\mu$ L (2 times dilution of a commercially available nasal spray with water)

市販点鼻薬  
A commercial nasal spray



(F040119B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) 20 mM KH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.5)  
B) methanol  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm  
Injection : A) 5  $\mu$ L (0.1 ~ 0.7 mg/mL)  
B) 3  $\mu$ L (2 times dilution of a commercially available nasal spray with water)

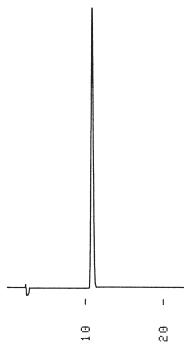
鼻炎用点鼻剤  
Collunarium

Courtesy of NIHON ARUTU PHARMACEUTICAL CO.,LTD. (Y920610A)

Column : YMC-Pack Ph (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : acetonitrile/water/NH<sub>4</sub>SCN (48/52/0.5, v/v/w)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : UV at 270 nm, 2.56 AUFS  
 Injection : 10  $\mu$ L (0.2 ~ 5 mg/mL)  
 Sample : collunarium

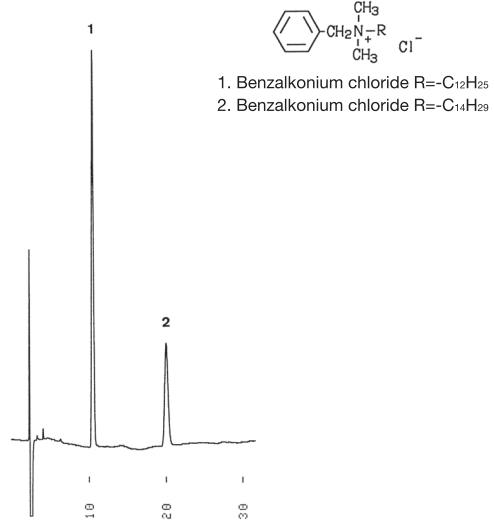
塩化ベンゼトニウム  
Benzethonium chloride

1. Benzethonium chloride



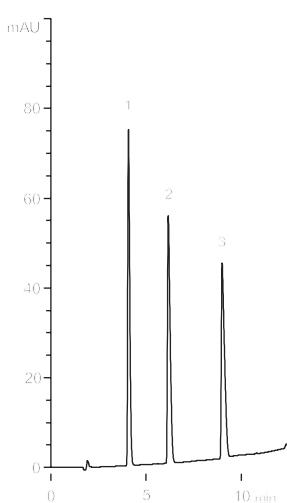
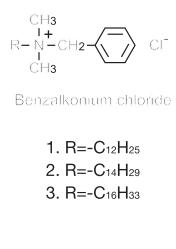
Courtesy of NIHON ARUTU PHARMACEUTICAL CO.,LTD. (T920527A)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
 150  $\times$  6.0 mm I.D.  
 Eluent : acetonitrile/water/NH<sub>4</sub>SCN (70/30/0.5, v/v/w)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : UV at 270 nm, 0.16 AUFS  
 Injection : 10  $\mu$ L (1.0 mg/mL)

塩化ベンザルコニウム  
Benzalkonium chloride

Courtesy of NIHON ARUTU PHARMACEUTICAL CO.,LTD. (T920529D)

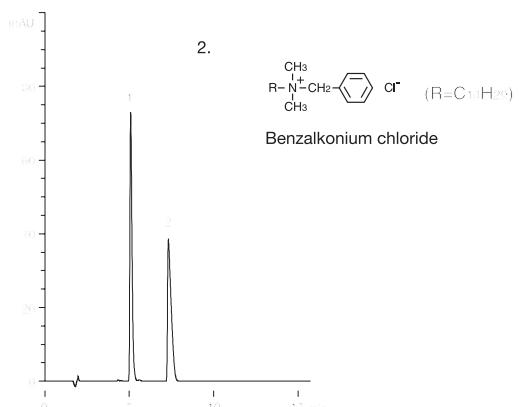
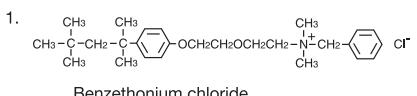
Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
 150  $\times$  6.0 mm I.D.  
 Eluent : acetonitrile/water/NH<sub>4</sub>SCN (70/30/0.5, v/v/w)  
 Flow rate : 1.0 mL/min  
 Temperature : 30 °C  
 Detection : UV at 260 nm, 0.02 AUFS  
 Injection : 10  $\mu$ L (1.0 mg/mL benzalkonium chloride)

塩化ベンザルコニウム  
Benzalkonium chloride

(F031210G)

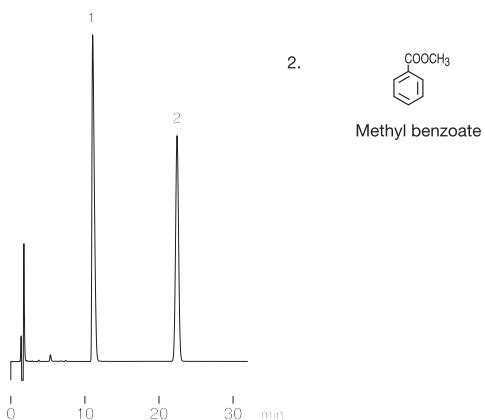
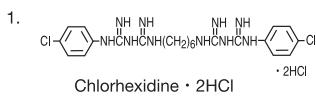
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : A) 100 mM NaClO<sub>4</sub>/methanol (20/80)  
 B) methanol  
 0-50% B (0-10 min)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 260 nm  
 Injection : 10  $\mu$ L (1.0 mg/mL)

殺菌剤  
Disinfectants



(F031208D)

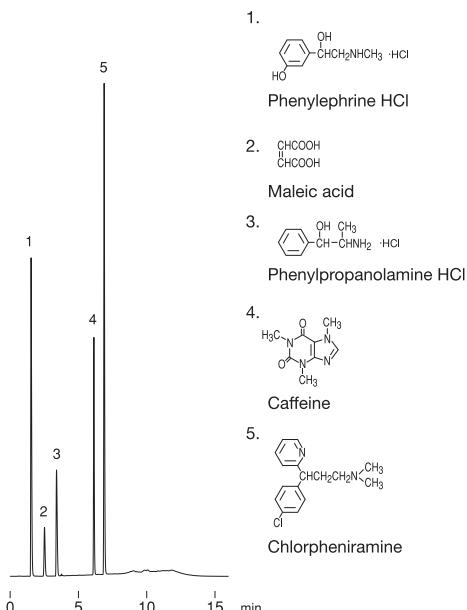
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 100 mM NaClO<sub>4</sub>/methanol (20/80)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm  
Injection : 10  $\mu$ L (0.5 ~ 1.0 mg/mL)



(N040206D)

Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (30/70/0.1)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.16 mg/mL, 0.1  $\mu$ L/mL)

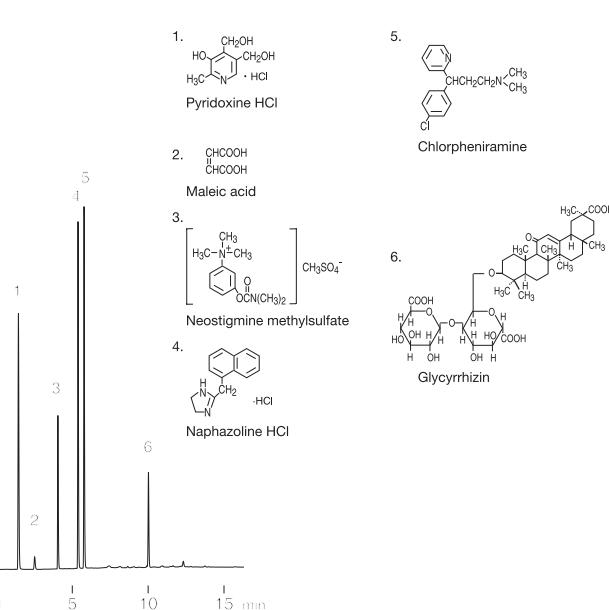
鼻炎薬成分  
Ingredients in a drug for rhinitis



(J010418B)

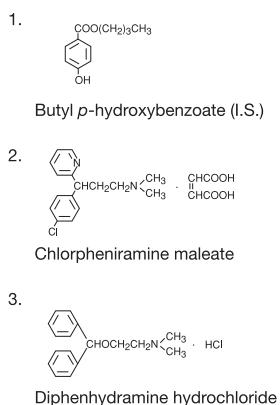
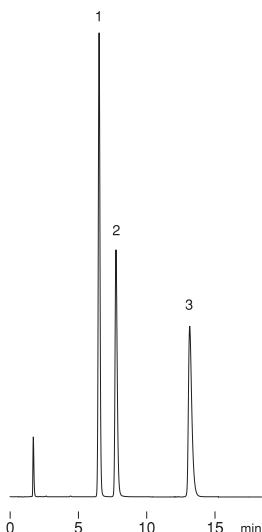
Column : Hydrosphere C18 (3  $\mu$ m, 12 nm)  
50  $\times$  4.6 mm I.D.  
Eluent : A) 20 mM KH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.5)  
B) acetonitrile  
0-40% B (0-10 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.064 AUFS  
Injection : 3  $\mu$ L (0.02 ~ 0.5 mg/mL)

点眼剤成分  
Ingredients in an eye drop



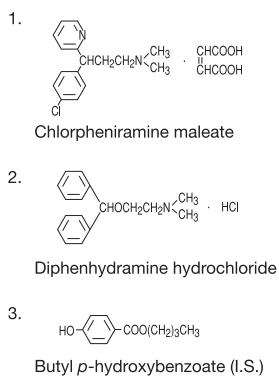
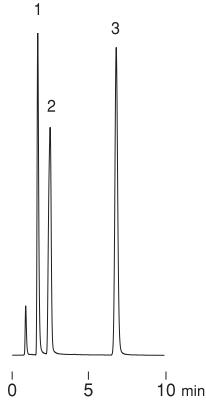
(J010406A)

Column : Hydrosphere C18 (3  $\mu$ m, 12 nm)  
50  $\times$  4.6 mm I.D.  
Eluent : A) 20 mM KH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.5)  
B) acetonitrile  
0-60% B (0-10 min), 60% B (10-15 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 265 nm, 0.128 AUFS  
Injection : 5  $\mu$ L (0.03 ~ 0.3 mg/mL)

抗ヒスタミン薬  
Histamine antagonists

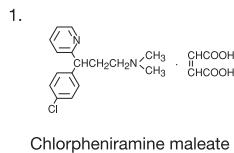
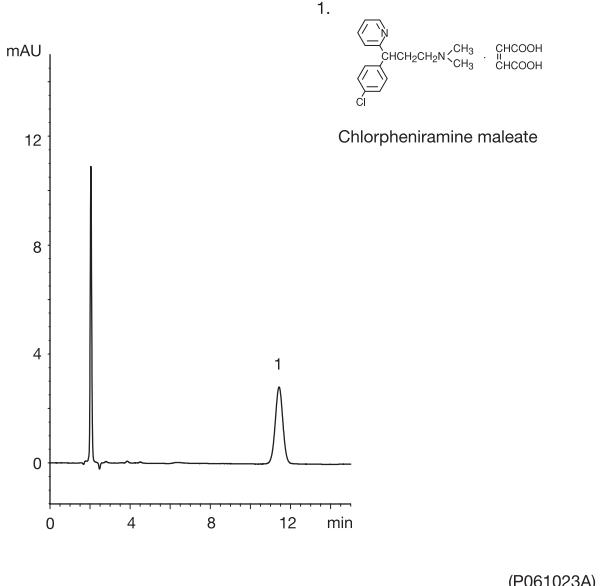
(J010619A)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/methanol (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.13 AUFS  
Injection : 5  $\mu$ L (0.05 ~ 2.0 mg/mL)

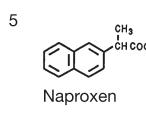
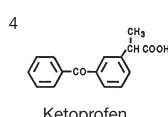
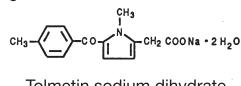
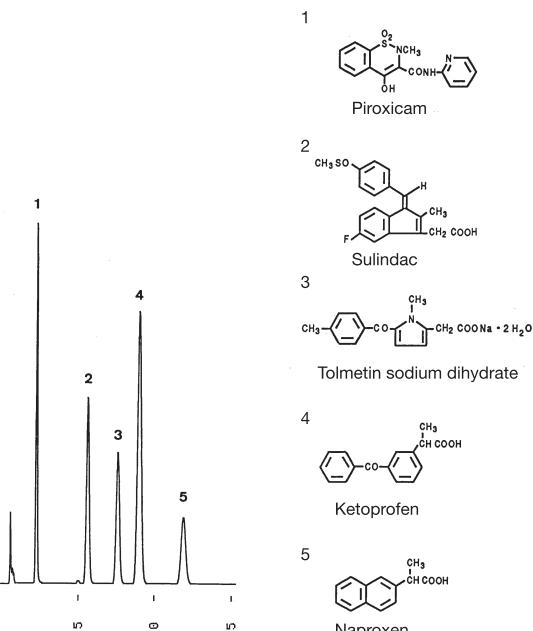
抗ヒスタミン薬  
Histamine antagonists

(A980723A)

Column : YMC-Pack Pro C18 (3  $\mu$ m, 12 nm)  
75  $\times$  2.0 mm I.D.  
Eluent : acetonitrile/50mM CH<sub>3</sub>COONH<sub>4</sub> (40/60)  
Flow rate : 0.2 mL/min  
Temperature : 37°C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 2  $\mu$ L (0.05 ~ 2.0 mg/mL)

クロルフェニラミンマレイン酸塩（日本薬局方15改正分析条件）  
Chlorpheniramine maleate (Japanese Pharmacopoeia vol.15)

Column : YMC-Pack ODS-A (10  $\mu$ m, 12 nm)  
300  $\times$  4.0 mm I.D.  
Eluent : phosphate buffer (pH 2.8) \* /acetonitrile (80/20)  
\* Dissolve 8.57 g of NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> and 1 mL of H<sub>3</sub>PO<sub>4</sub> into 1000 mL water  
Flow rate : 1.3 mL/min  
Temperature : 25 °C  
Detection : UV at 225 nm  
Injection : 20  $\mu$ L (0.003 mg/mL)

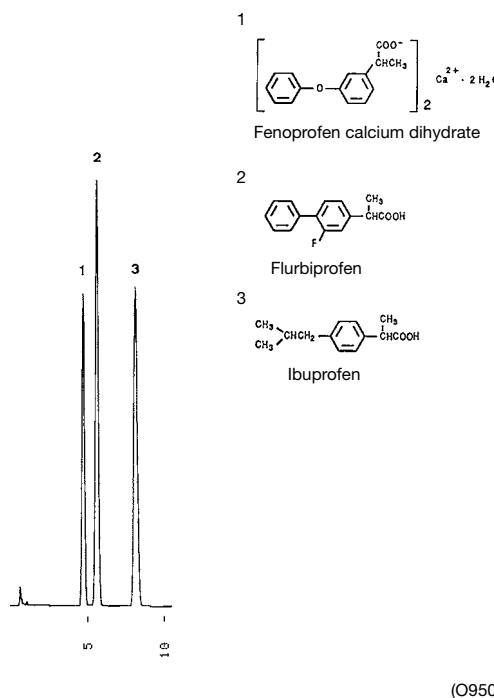
酸性非ステロイド性抗炎症薬  
Acidic non-steroidal anti-inflammatory drugs

(O950124A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : 2-propanol/water/acetic acid (25/75/1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.04 AUFS  
Injection : 5  $\mu$ L (20  $\mu$ g/mL)

## 酸性非ステロイド性抗炎症薬

## Acidic non-steroidal anti-inflammatory drugs

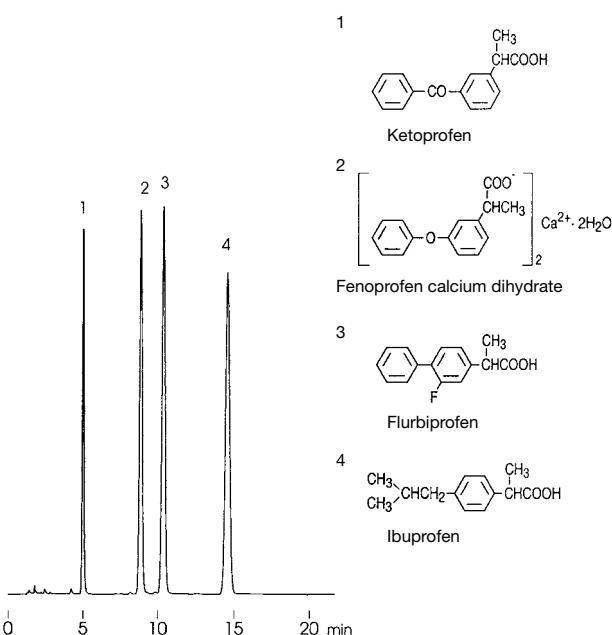


(O950125C)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (65/35/1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.04 AUFS  
Injection : 7  $\mu$ L (160, 16, 820  $\mu$ g/mL)

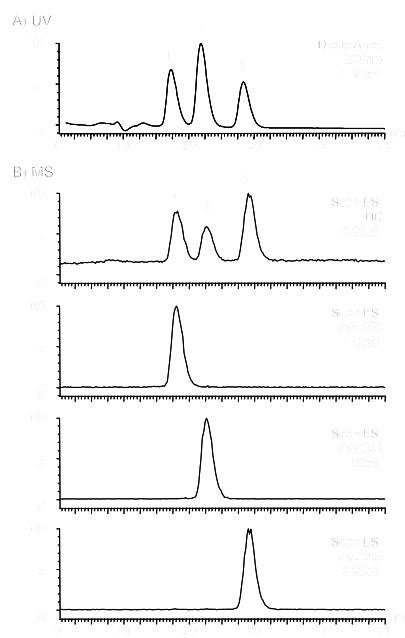
## 酸性非ステロイド性抗炎症薬

## Acidic non-steroidal anti-inflammatory drugs



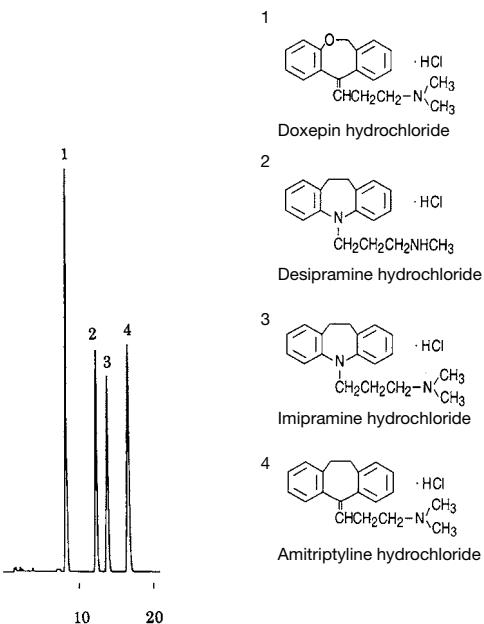
(A970321A)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (65/35/1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.032 AUFS  
Injection : 7  $\mu$ L (6 ~ 820  $\mu$ g/mL)

酸性非ステロイド性解熱鎮痛抗炎症薬 - LC/MS  
Acidic non-steroidal anti-inflammatory drugs - LC/MS

(J040722B)

Column : YMC-Pack Pro C18 (3  $\mu$ m, 12 nm)  
50  $\times$  2.0 mm I.D.  
Eluent : methanol/water/acetic acid (75/25/0.05)  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : A) UV at 230 nm  
B) ESI negative-mode  
Injection : 1  $\mu$ L (50  $\mu$ g/mL)

三環系抗うつ薬  
Tricyclic antidepressants

(D960724A)

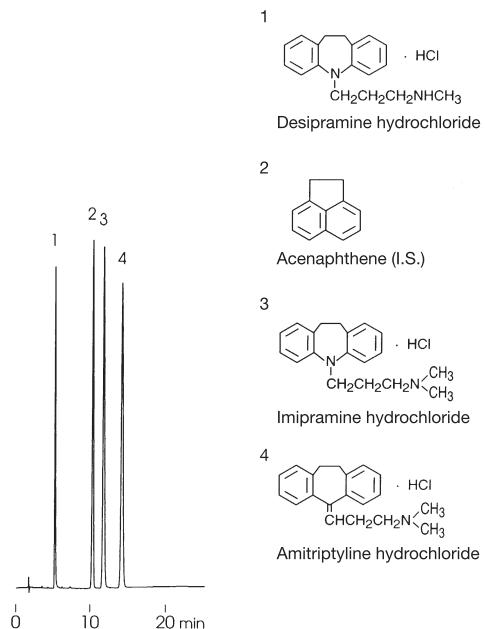
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 215 nm, 0.13 AUFS  
Injection : 2  $\mu$ L (0.125 mg/mL)



# 医薬品、生体関連物質 Drugs, Metabolites

## 三環系抗うつ薬

### Tricyclic antidepressants

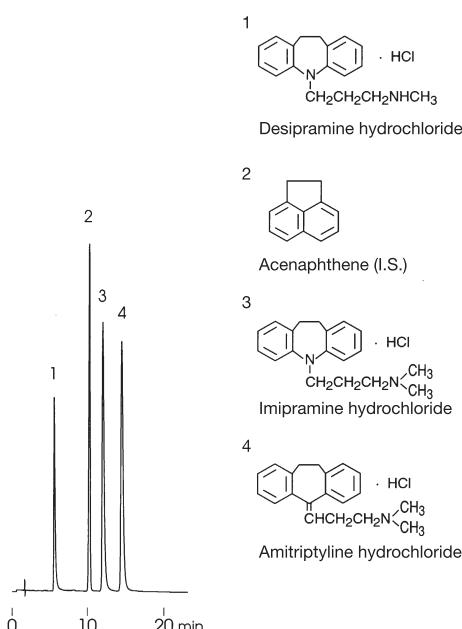


(A961015G)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/methanol (25/75)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.1 ~ 0.5 mg/mL)

## 三環系抗うつ薬

### Tricyclic antidepressants

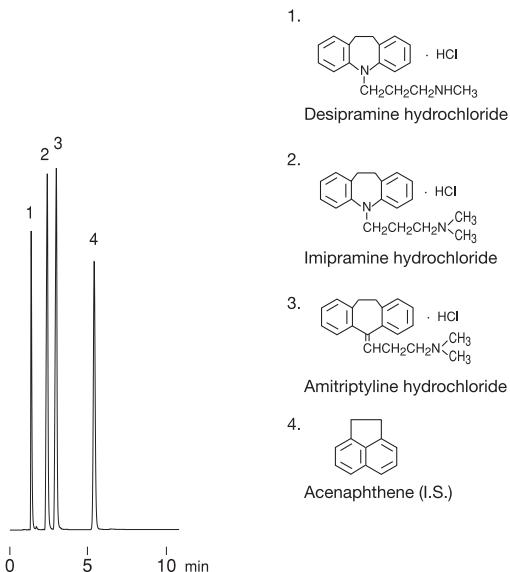


(A961016B)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/methanol (25/75)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.1 ~ 0.5 mg/mL)

## 三環系抗うつ薬

### Tricyclic antidepressants

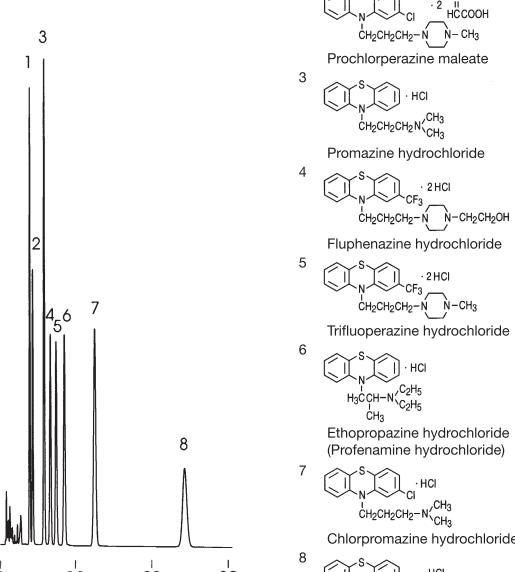


(A980827E)

Column : YMC-Pack Pro C18 (3  $\mu$ m, 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/20 mM CH<sub>3</sub>COONH<sub>4</sub> (75/25)  
Flow rate : 1.0 mL/min  
Temperature : 37°C  
Detection : UV at 254 nm, 0.32 AUFS  
Injection : 5  $\mu$ L (0.1 ~ 0.5 mg/mL)

## 抗精神病薬

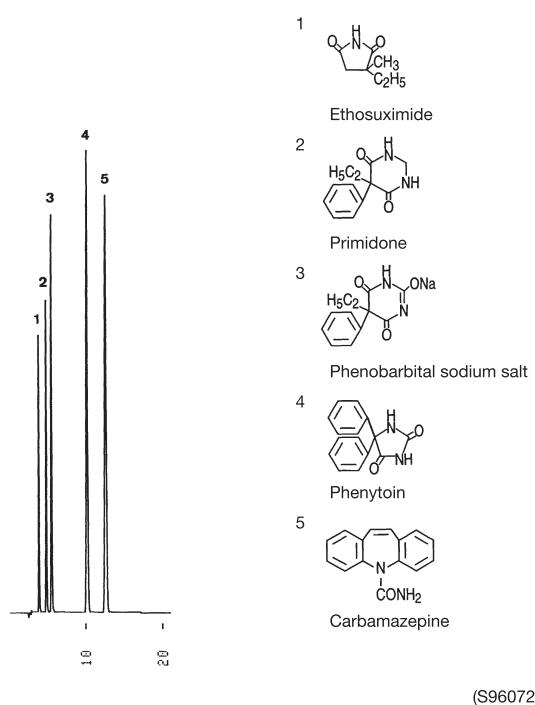
### Antipsychotic drugs



(O950627B)

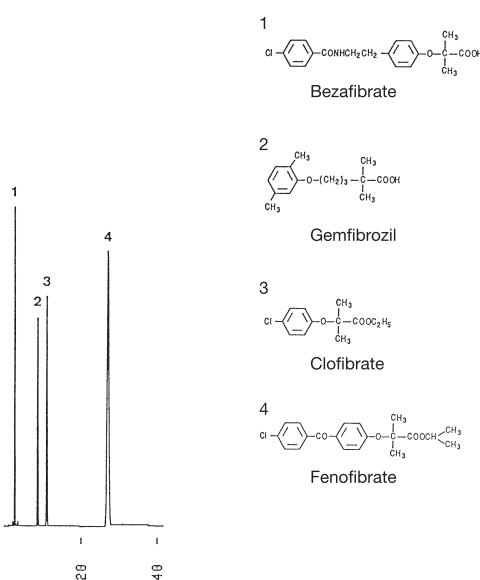
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (30/70/0.1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.064 AUFS  
Injection : 5  $\mu$ L (0.02 mg/mL)

抗てんかん薬  
Antiepileptics



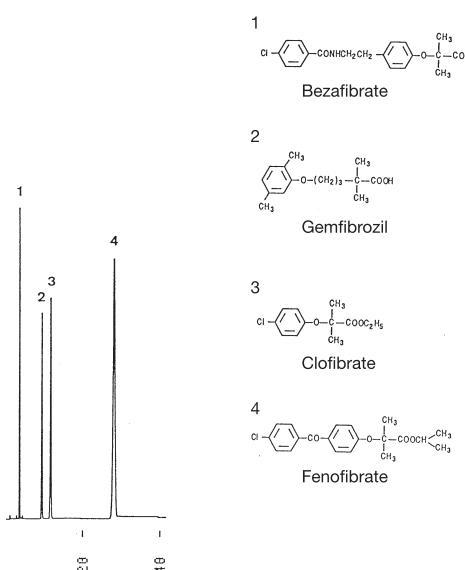
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-(NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (pH 6.7)/methanol (50/50)  
Flow rate : 0.7 mL/min  
Temperature : 37 °C  
Detection : UV at 215 nm, 0.32 AUFS  
Injection : 8  $\mu$ L (0.035 ~ 0.7 mg/mL)

抗高脂血症剤  
Hypolipidemic drugs



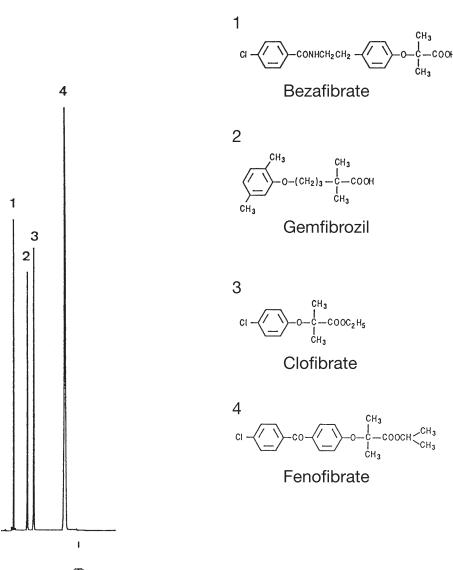
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (60/40/1)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 275 nm, 0.064 AUFS  
Injection : 8  $\mu$ L (0.05 ~ 0.25 mg/mL)

抗高脂血症剤  
Hypolipidemic drugs



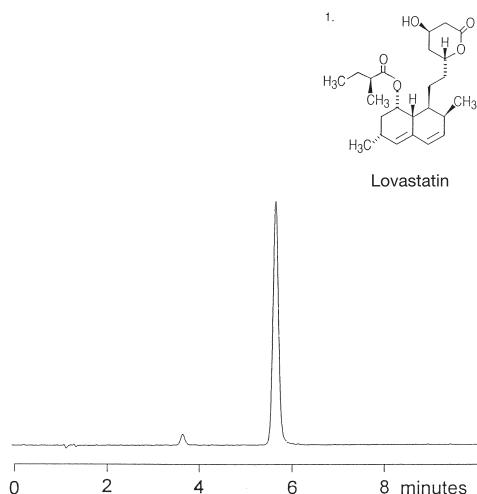
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (60/40/1)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 275 nm, 0.064 AUFS  
Injection : 8  $\mu$ L (0.05 ~ 0.25 mg/mL)

抗高脂血症剤  
Hypolipidemic drugs



Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (60/40/1)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 275 nm, 0.064 AUFS  
Injection : 8  $\mu$ L (0.05 ~ 0.25 mg/mL)

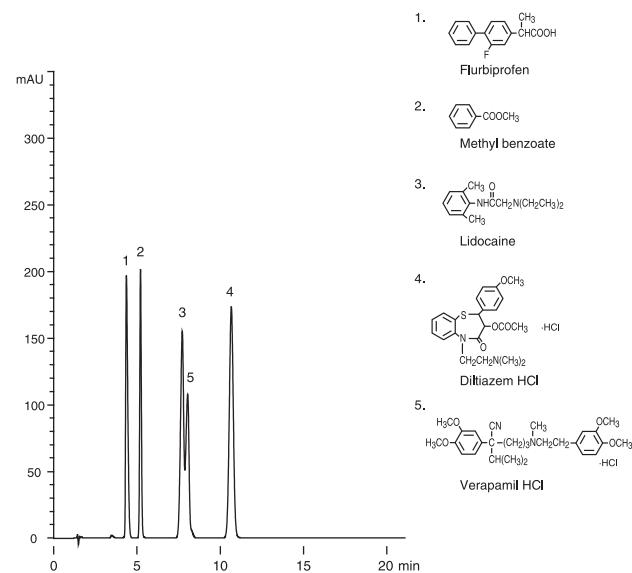
ロバスタチン  
Lovastatin



(J010528B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/0.05% formic acid (30/70)  
Flow rate : 1.5 mL/min  
Detection : UV at 240 nm  
Injection : 5  $\mu$ L (0.1 mg/mL)

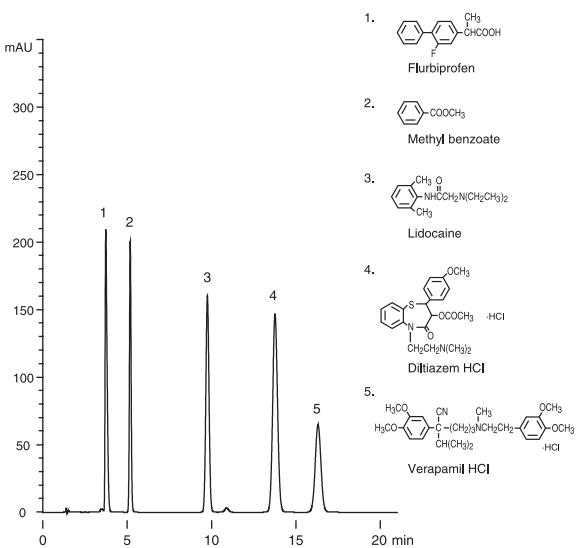
酸性および塩基性医薬品 (pH 6.8)  
Acidic and basic drugs (pH 6.8)



(F040714E)

Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM CH<sub>3</sub>COONH<sub>4</sub>/methanol (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm  
Injection : 10  $\mu$ L (0.04 ~ 100  $\mu$ g/mL)

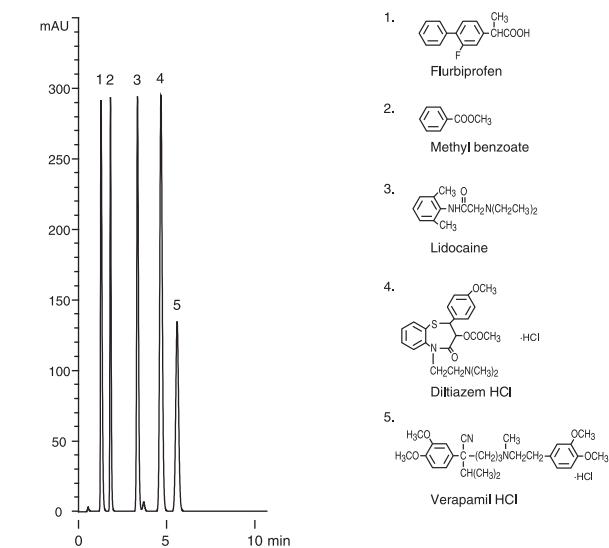
酸性および塩基性医薬品 (pH 8.8)  
Acidic and basic drugs (pH 8.8)



(F040714C)

Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM CH<sub>3</sub>COONH<sub>4</sub>-NH<sub>3</sub> (pH 8.8)/methanol (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm  
Injection : 10  $\mu$ L (0.04 ~ 100  $\mu$ g/mL)

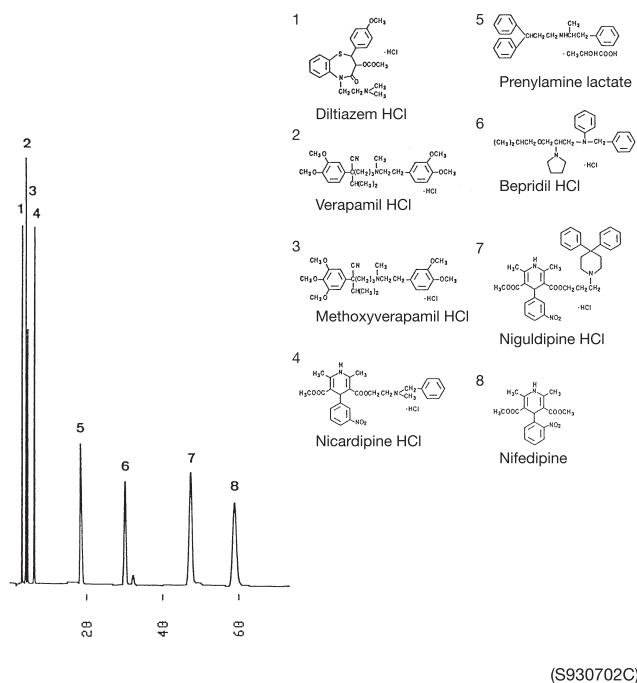
酸性および塩基性医薬品 (pH 8.8)  
Acidic and basic drugs (pH 8.8)



(F040714D)

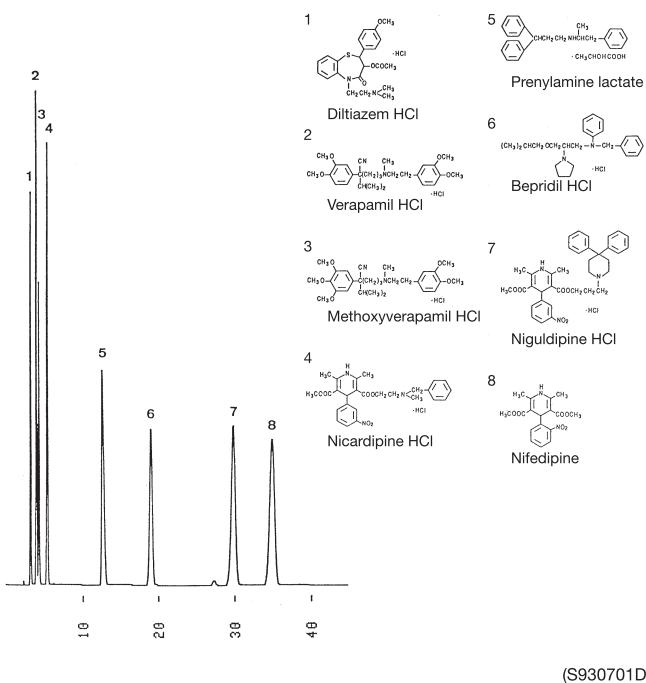
Column : YMC-Pack Pro C18 RS (3  $\mu$ m, 8 nm)  
50  $\times$  4.6 mm I.D.  
Eluent : 20 mM CH<sub>3</sub>COONH<sub>4</sub>-NH<sub>3</sub> (pH 8.8)/methanol (35/65)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm  
Injection : 10  $\mu$ L (0.04 ~ 100  $\mu$ g/mL)

カルシウム拮抗薬  
Calcium antagonists



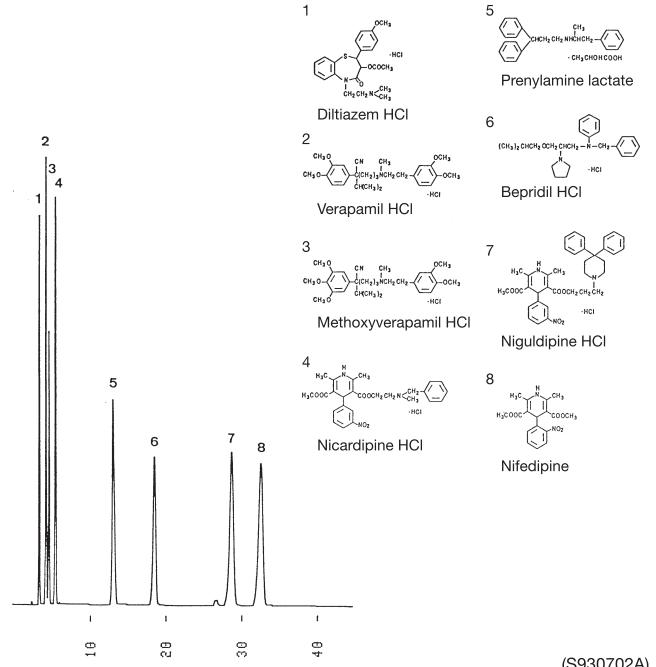
Column	: J'sphere ODS-H80 (4 $\mu$ m, 8 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.0)/acetonitrile/THF/TBA·Br (75/15/10/0.5, v/v/w)
Flow rate	: 0.8 mL/min
Temperature	: 30 °C
Detection	: UV at 270 nm, 0.064 AUFS
Injection	: 8 $\mu$ L (0.05 ~ 1.4 mg/mL)

カルシウム拮抗薬  
Calcium antagonists



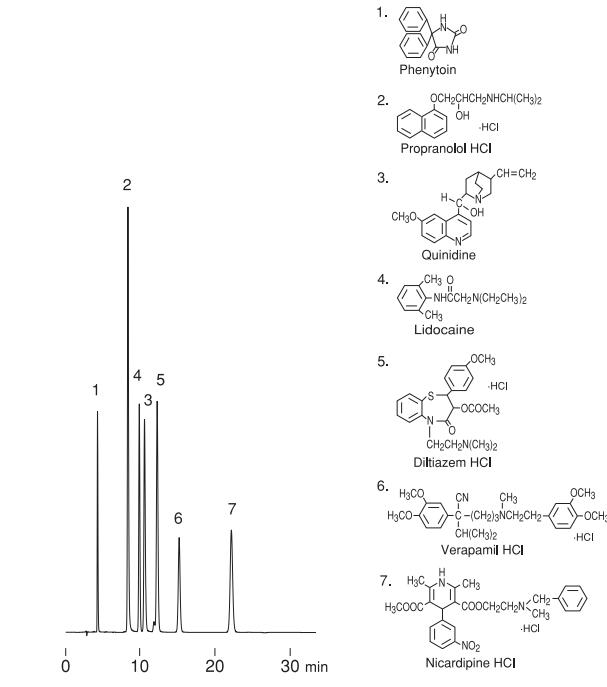
Column	: J'sphere ODS-M80 (4 $\mu$ m, 8 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.0)/acetonitrile/THF/TBA·Br (70/20/10/0.35, v/v/w)
Flow rate	: 0.8 mL/min
Temperature	: 30 °C
Detection	: UV at 270 nm, 0.064 AUFS
Injection	: 8 $\mu$ L (0.05 ~ 1.4 mg/mL)

カルシウム拮抗薬  
Calcium antagonists



Column	: J'sphere ODS-L80 (4 $\mu$ m, 8 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.0)/acetonitrile/THF/TBA·Br (70/20/10/0.35, v/v/w)
Flow rate	: 0.8 mL/min
Temperature	: 30 °C
Detection	: UV at 270 nm, 0.064 AUFS
Injection	: 8 $\mu$ L (0.05 ~ 1.4 mg/mL)

不整脈治療薬  
Antiarrhythmic drugs

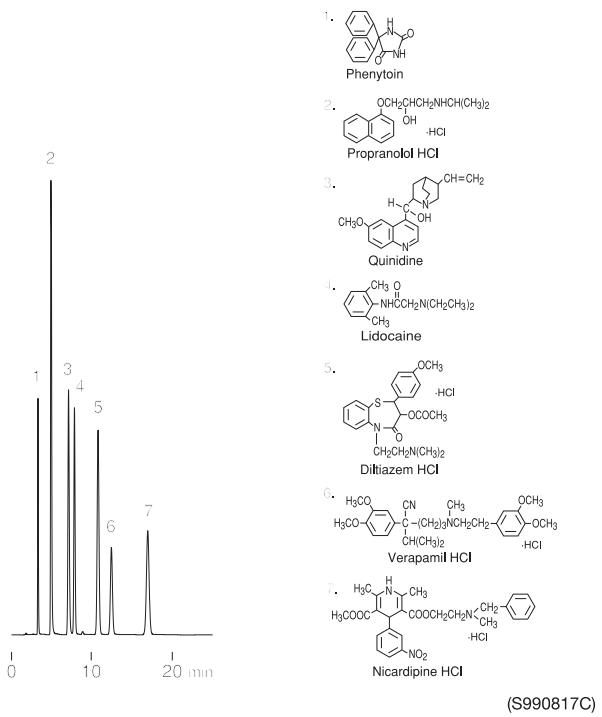


Column	: YMC-Pack Pro C18 (5 $\mu$ m, 12 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: 20 mM KH <sub>2</sub> PO <sub>4</sub> -K <sub>2</sub> HPO <sub>4</sub> (pH 6.9)/methanol (30/70)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 220 nm, 0.26 AUFS
Injection	: 5 $\mu$ L (0.05 ~ 0.1 mg/mL)



### 不整脈治療薬

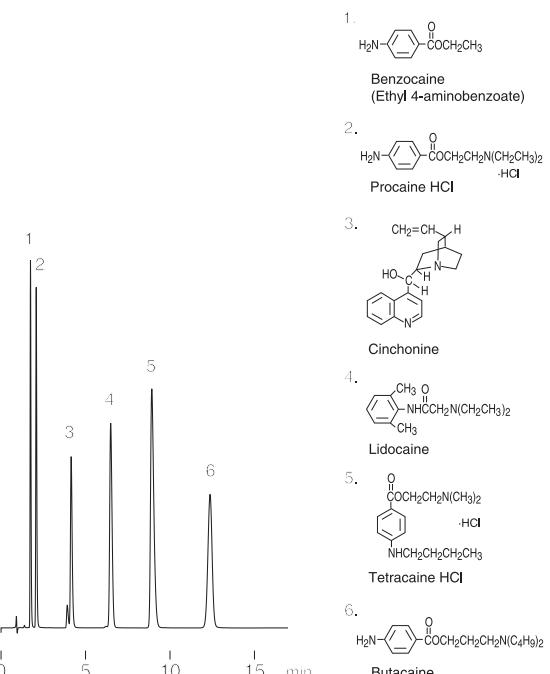
#### Antiarrhythmic drugs



Column : YMC-Pack Pro C4 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/methanol (40/60)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.26 AUFS  
Injection : 5  $\mu$ L (0.05 ~ 0.1 mg/mL)

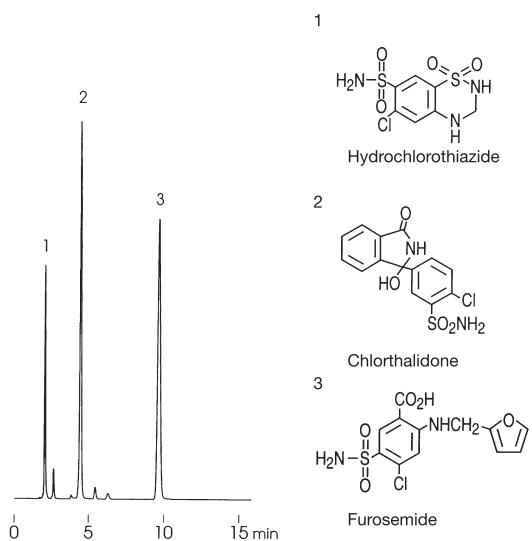
### 局所麻酔薬

#### Local anesthetics



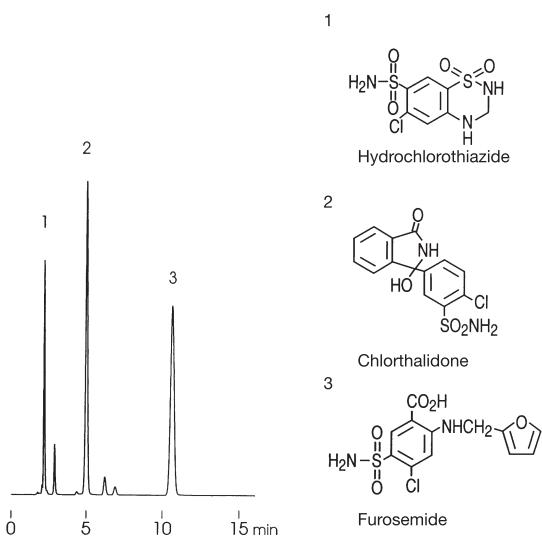
Column : HydroSphere C18 (3  $\mu$ m, 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/methanol (40/60)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.02 ~ 0.5 mg/mL)

### 利尿薬 Diuretics



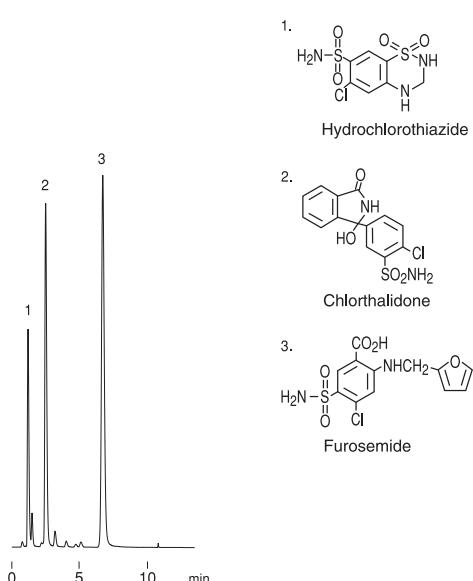
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 3.2)/methanol (60/40)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.16 AUFS  
Injection : 15  $\mu$ L (0.015 ~ 0.2 mg/mL)

### 利尿薬 Diuretics



Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 3.2)/methanol (60/40)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.16 AUFS  
Injection : 15  $\mu$ L (0.015 ~ 0.2 mg/mL)

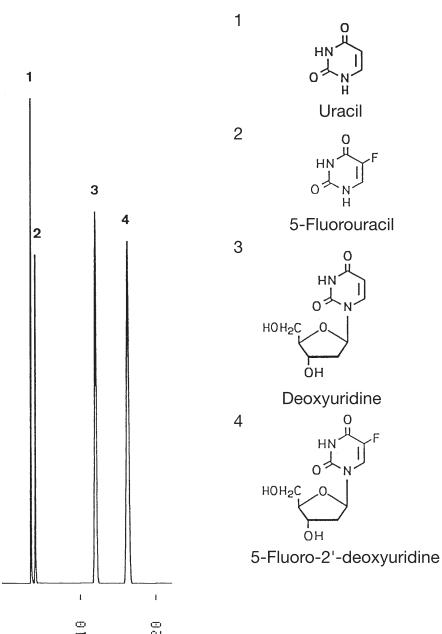
利尿薬  
Diuretics



(A980716A)

Column : YMC-Pack Pro C18 (3  $\mu$ m, 12 nm)  
 75  $\times$  2.0 mm I.D.  
 Eluent : methanol/1% acetic acid (40/60)  
 Flow rate : 0.2 mL/min  
 Temperature : 37 °C  
 Detection : UV at 280 nm, 0.08 AUFS  
 Injection : 3  $\mu$ L (0.015 ~ 0.2 mg/mL)

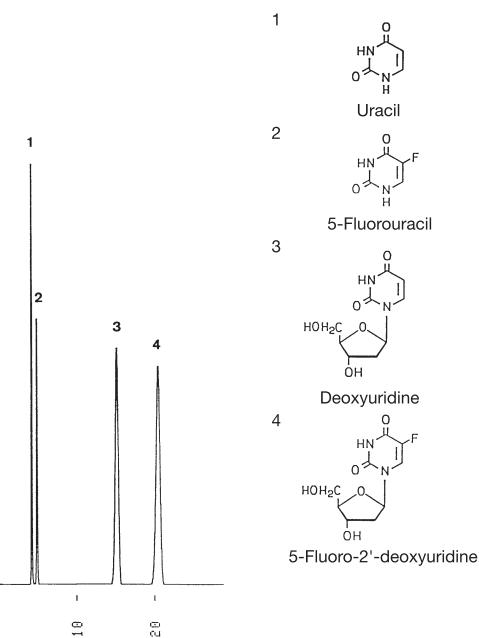
制がん剤および関連化合物  
Antineoplastic and related compounds



(T920924E)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : 10 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 254 nm, 0.16 AUFS  
 Injection : 10  $\mu$ L (0.025 ~ 0.2 mg/mL)

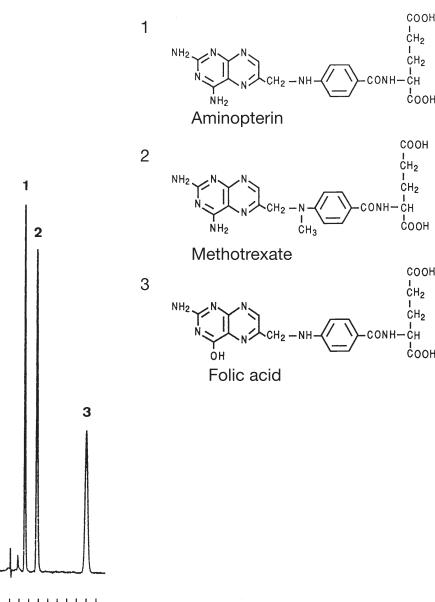
制がん剤および関連化合物  
Antineoplastic and related compounds



(T920924G)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
 150  $\times$  4.6 mm I.D.  
 Eluent : 10 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 254 nm, 0.16 AUFS  
 Injection : 10  $\mu$ L (0.025 ~ 0.2 mg/mL)

葉酸および葉酸拮抗物質  
Folic acid and its antagonists



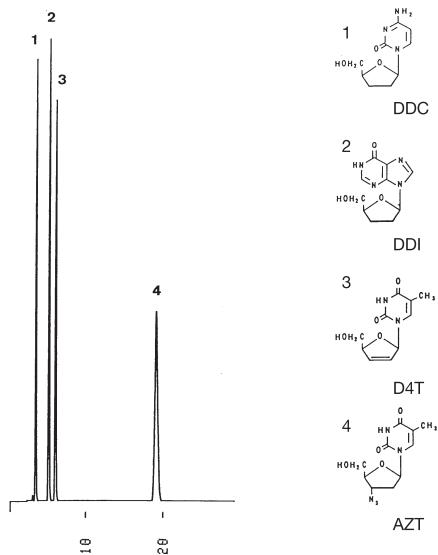
(O950411B)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
 75  $\times$  4.6 mm I.D.  
 Eluent : methanol/water/acetic acid (20/80/1)  
 Flow rate : 1.0 mL/min  
 Temperature : ambient (25 °C)  
 Detection : UV at 300 nm, 0.04 AUFS  
 Injection : 5  $\mu$ L (16  $\mu$ g/mL)



抗HIVヌクレオシド誘導体

Anti-human immunodeficiency virus (HIV) agents

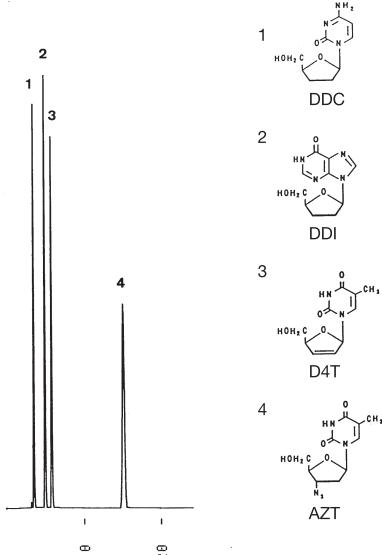


(K930311C)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/10 mM KH<sub>2</sub>PO<sub>4</sub> (10/60)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 7  $\mu$ L (0.125 mg/mL)

抗HIVヌクレオシド誘導体

Anti-human immunodeficiency virus (HIV) agents

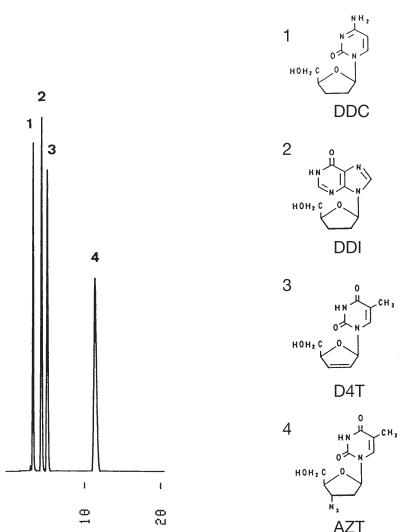


(K930311A)

Column : YMC-Pack C<sub>8</sub> (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/10 mM KH<sub>2</sub>PO<sub>4</sub> (10/60)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 7  $\mu$ L (0.125 mg/mL)

抗HIVヌクレオシド誘導体

Anti-human immunodeficiency virus (HIV) agents

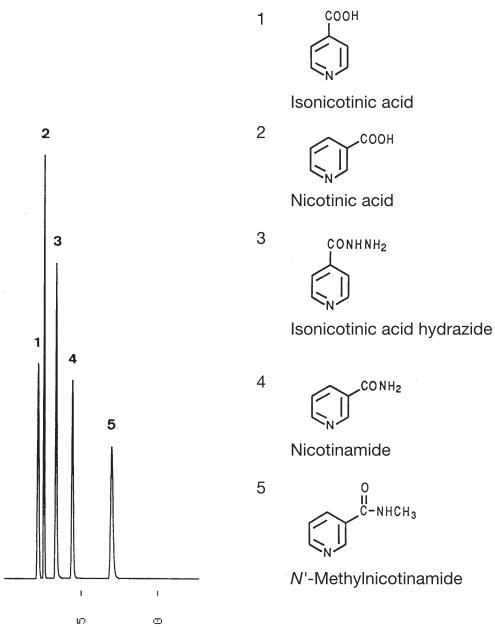


(K930311F)

Column : YMC-Pack C<sub>4</sub> (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/10 mM KH<sub>2</sub>PO<sub>4</sub> (10/60)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 7  $\mu$ L (0.125 mg/mL)

ニコチン酸構造類縁体

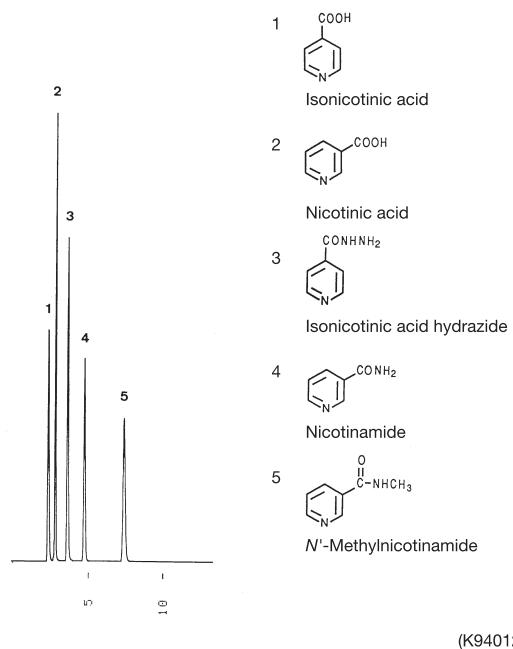
Nicotinic acid analogues



(K940125I)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/20 mM KH<sub>2</sub>PO<sub>4</sub> (5/95)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.64 AUFS  
Injection : 13  $\mu$ L (0.2 mg/mL)

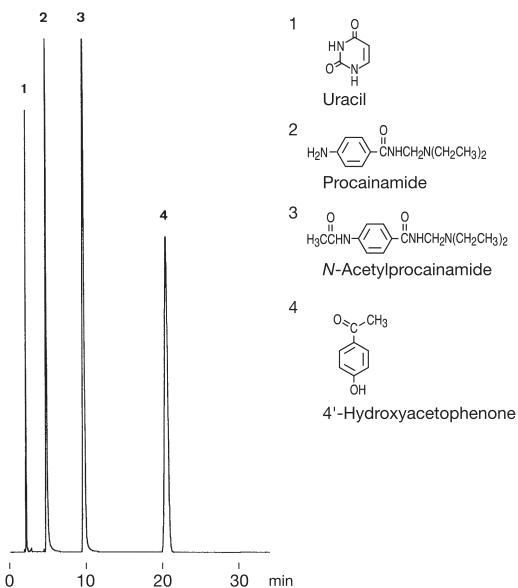
ニコチン酸構造類縁体  
Nicotinic acid analogues



(K940125K)

Column : YMC-Pack C<sub>8</sub> (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : acetonitrile/20 mM KH<sub>2</sub>PO<sub>4</sub> (5/95)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.64 AUFS  
Injection : 13 μL (0.2 mg/mL)

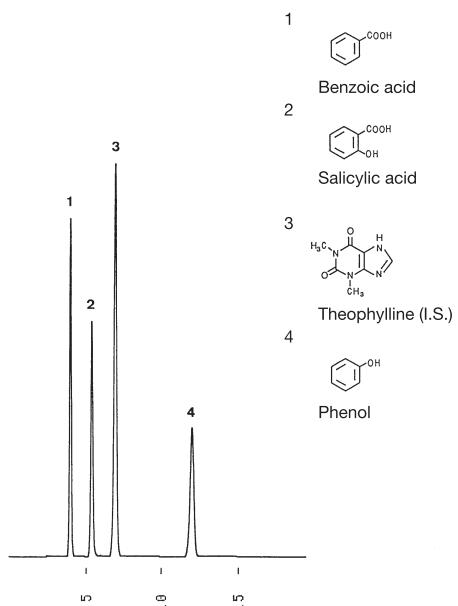
塩基性化合物  
Basic compounds



(T931217C)

Column : YMC-Pack ODS-AM (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 20 mM K<sub>2</sub>HPO<sub>4</sub>-KH<sub>2</sub>PO<sub>4</sub> (pH 6.9)/acetonitrile (92/8)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.32 AUFS  
Injection : 10 μL (30 ~ 300 μ g/mL)

殺菌薬  
Disinfectants

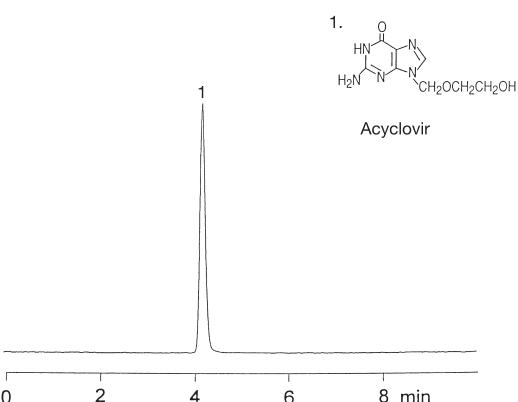


(S930617D)

Column : YMC-Pack ODS-AL (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 100 mM KH<sub>2</sub>PO<sub>4</sub>-Na<sub>2</sub>HPO<sub>4</sub> (pH 7.0)/methanol (75/25)  
Flow rate : 0.8 mL/min  
Temperature : 30 °C  
Detection : UV at 270 nm, 0.13 AUFS  
Injection : 3 μL (0.1 ~ 0.8 mg/mL)

(日本薬局方第 12 改正記載条件)

アシクロビル  
Acyclovir



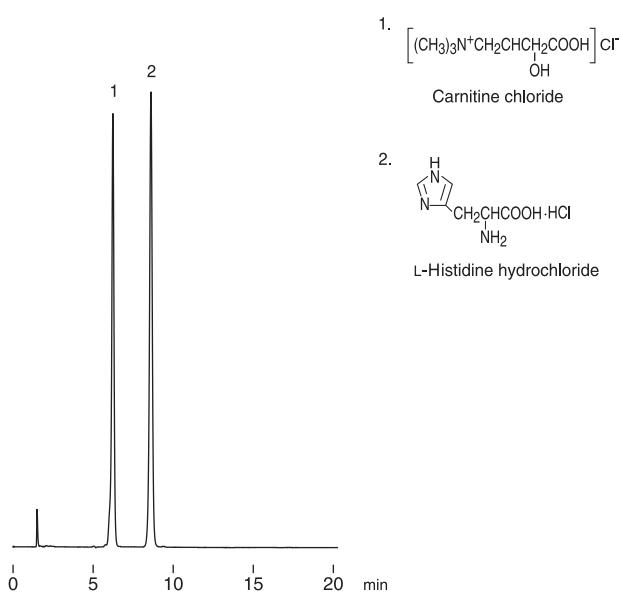
(J010528C)

Column : YMC-Pack Pro C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : acetonitrile/0.05% formic acid (3/97)  
Flow rate : 1.5 mL/min  
Detection : UV at 254 nm  
Injection : 5 μL (0.1 mg/mL)



# 医薬品、生体関連物質 Drugs, Metabolites

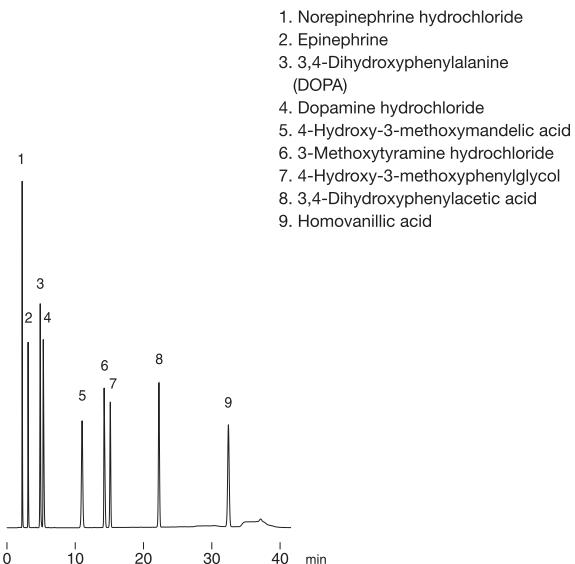
## 塩化カルニチン Carnitine chloride



(F000629A)

Column	: Hydrosphere C18 (5 $\mu\text{m}$ , 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: 50 mM $\text{NaH}_2\text{PO}_4\text{-H}_3\text{PO}_4$ (pH 2.6) containing 15 mM 1-pentanesulfonic acid sodium salt
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 210 nm, 0.064 AUFS
Injection	: 4 $\mu\text{L}$ (0.2 ~ 20 mg/mL)

## カテコールアミン Catecholamines

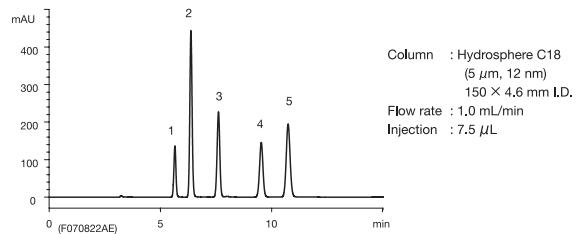


(F000817A)

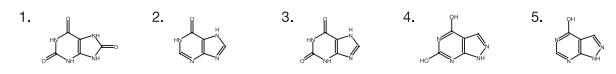
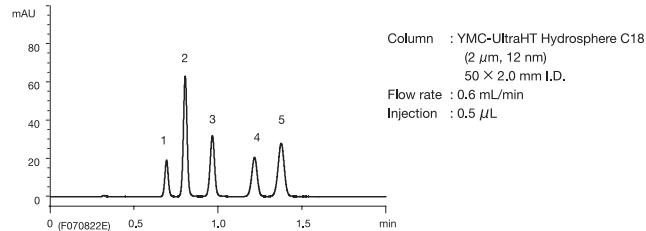
Column	: Hydrosphere C18 (5 $\mu\text{m}$ , 12 nm) 150 $\times$ 4.6 mm I.D.
Eluent	: A) 50 mM $\text{KH}_2\text{PO}_4\text{-H}_3\text{PO}_4$ (pH 3.1) B) 50 mM $\text{KH}_2\text{PO}_4\text{-H}_3\text{PO}_4$ (pH 3.1)/acetonitrile (90/10) 0% B (0~5 min), 0~100% B (5~25 min, linear), 100% B (25~35 min)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 280 nm, 0.64 AUFS
Injection	: 10 $\mu\text{L}$ (0.15 ~ 0.25 mg/mL)

## キサンチンオキシダーゼ阻害剤代謝物 - 2 $\mu\text{m}$ カラムによる超高速分析 Xanthine oxidase inhibitor and its metabolites - method transfer to ultra-fast LC

### Conventional LC method



### Ultra-fast LC method

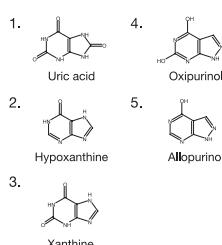
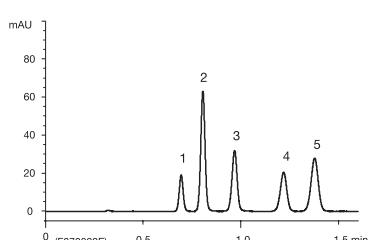


(F070906B)

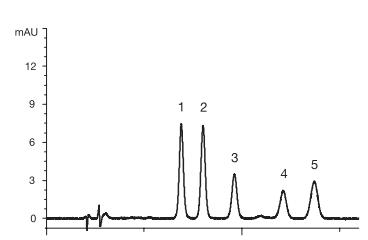
Eluent	: 10 mM $\text{CH}_3\text{COOH}\text{-CH}_3\text{COONH}_4$ (pH 4.5)
Temperature	: 37 °C
Detection	: UV at 254 nm
Sample	: 0.1 mg/mL

## 血清中のキサンチンオキシダーゼ阻害剤代謝物 Xanthine oxidase inhibitor and its metabolites in human serum

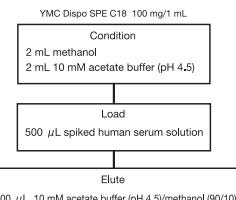
### A) Standard (100 $\mu\text{g/mL}$ )



### B) Spiked human serum (10 $\mu\text{g/mL}$ )



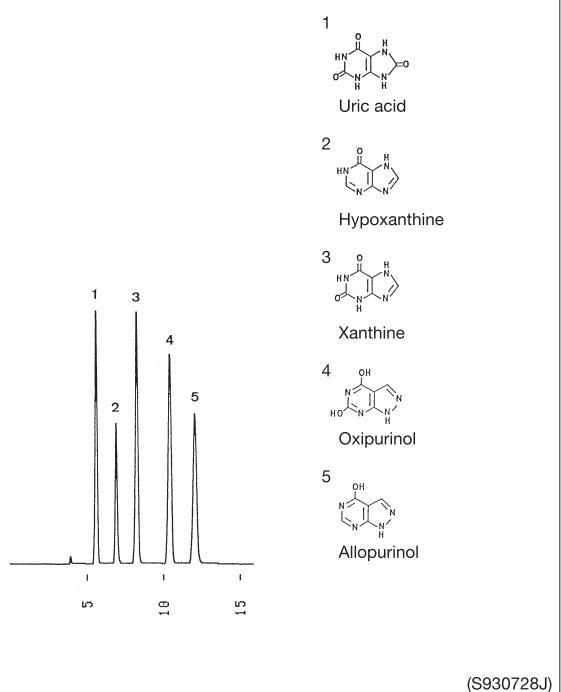
#### < Solid-phase extraction method >



(F070906A)

Column	: YMC-UltraHT Hydrosphere C18 (2 $\mu\text{m}$ , 12 nm) 50 $\times$ 2.0 mm I.D.
Eluent	: 10 mM $\text{CH}_3\text{COOH}\text{-CH}_3\text{COONH}_4$ (pH 4.5)
Flow rate	: 0.6 mL/min
Temperature	: 37 °C
Detection	: UV at 254 nm
Injection	: 0.5 $\mu\text{L}$

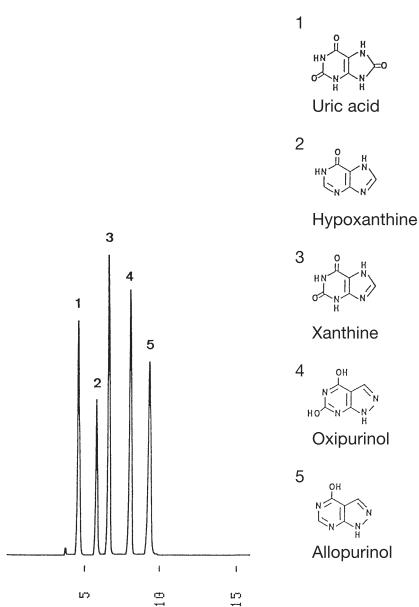
キサンチンオキシダーゼ阻害剤および関連化合物  
Xanthine oxidase inhibitor and related compounds



(S930728J)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.51 AUFS  
Injection : 8  $\mu$ L (0.05 ~ 0.2 mg/mL)

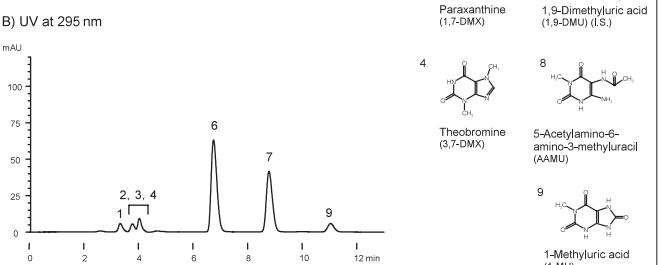
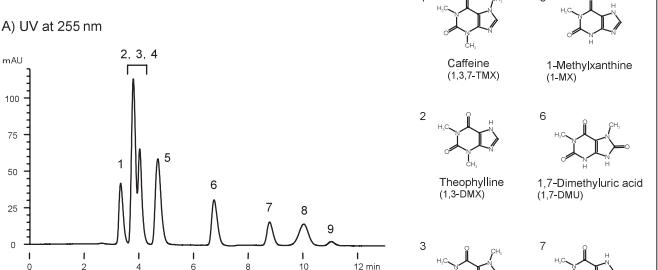
キサンチンオキシダーゼ阻害剤および関連化合物  
Xanthine oxidase inhibitor and related compounds



(S930729B)

Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.51 AUFS  
Injection : 8  $\mu$ L (0.05 ~ 0.2 mg/mL)

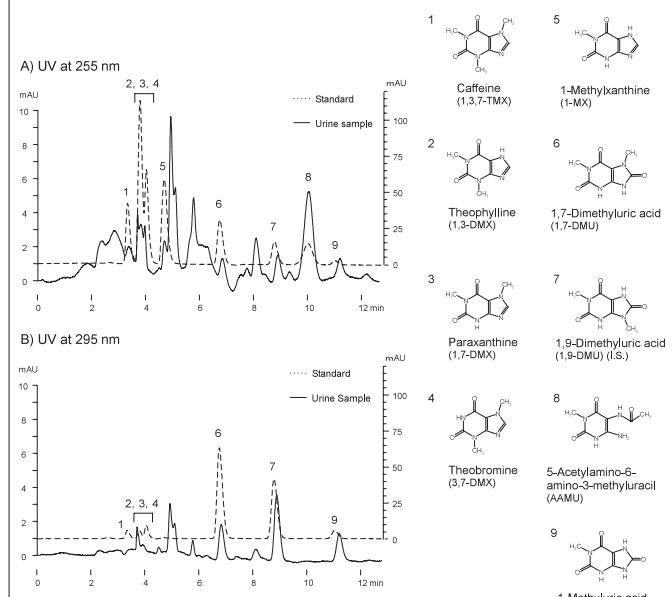
カフェイン代謝物  
Caffeine metabolites



Courtesy of Takashi FURUTA, Ph.D., Tokyo University of Pharmacy and Life science (F041213A)

Column : YMC-Pack Polyamine II  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/0.75% formic acid (4/1)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : A) UV at 255 nm, B) UV at 295 nm  
Injection : 10  $\mu$ L

尿中のカフェイン代謝物  
Caffeine metabolites in human urine

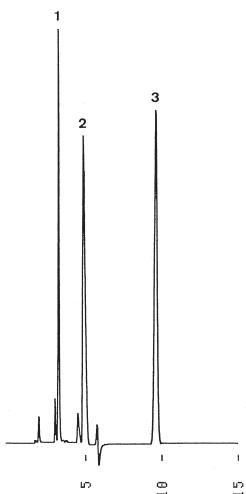


Courtesy of Takashi FURUTA, Ph.D., Tokyo University of Pharmacy and Life science (F041213B)

Column : YMC-Pack Polyamine II  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/0.75% formic acid (4/1)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : A) UV at 255 nm, B) UV at 295 nm  
Injection : Standard 10  $\mu$ L  
Urine sample 10  $\mu$ L

プリン代謝物  
Purine catabolites

1. Allantoin  
2. Allantoic acid  
3. Uric acid

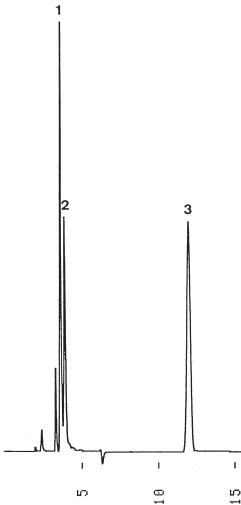


(G910607G)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  6.0 mm I.D.  
Eluent : 10 mM CH<sub>3</sub>COOH  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 200 nm, 0.16 AUFS  
Injection : 4  $\mu$ L (0.10 ~ 0.71 mg/mL)

プリン代謝物  
Purine catabolites

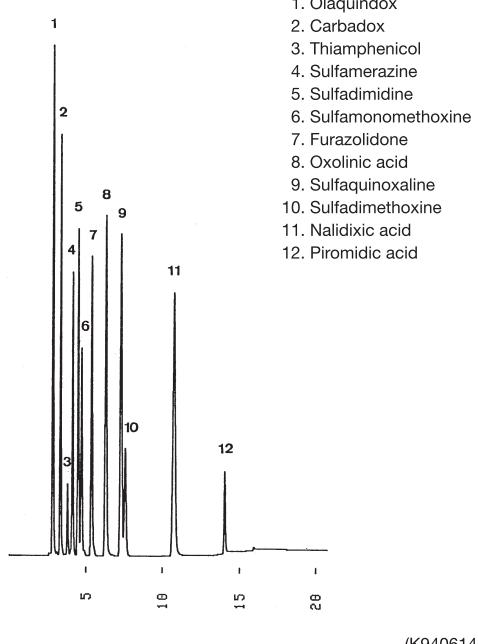
1. Allantoin  
2. Allantoic acid  
3. Uric acid



(G910618A)

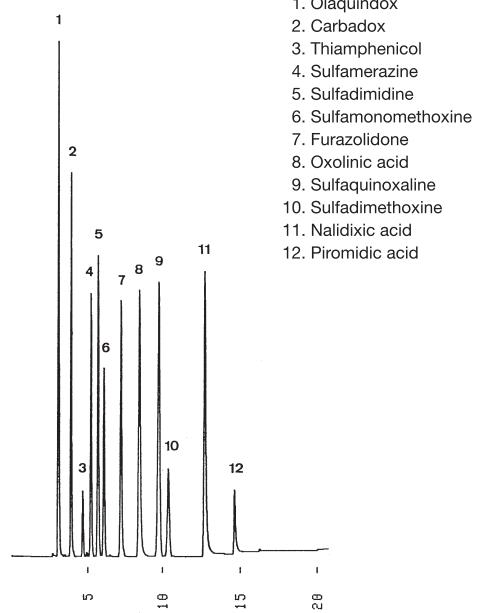
Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  6.0 mm I.D.  
Eluent : 10 mM CH<sub>3</sub>COOH  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 200 nm, 0.16 AUFS  
Injection : 4  $\mu$ L (0.10 ~ 0.71 mg/mL)

合成抗菌剤  
Antibacterial agents



(K940614B)

合成抗菌剤  
Antibacterial agents

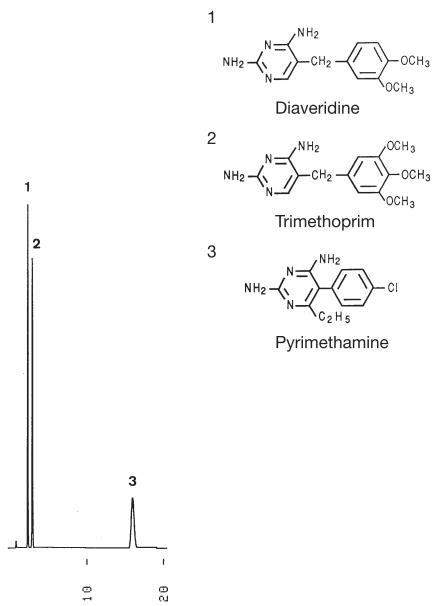


(K940615C)

Column	: YMC-Pack ODS-A (5 $\mu$ m, 12 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: A) acetonitrile/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (10/90) B) acetonitrile/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (80/20) 25% B (0-5 min), 25-100% B (5-15 min), 100% B (15-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 240 nm, 0.32 AUFS
Injection	: 10 $\mu$ L (0.05 mg/mL)

Column	: J'sphere ODS-L80 (4 $\mu$ m, 8 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: A) acetonitrile/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (10/90) B) acetonitrile/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (80/20) 25% B (0-5 min), 25-100% B (5-15 min), 100% B (15-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 240 nm, 0.32 AUFS
Injection	: 10 $\mu$ L (0.05 mg/mL)

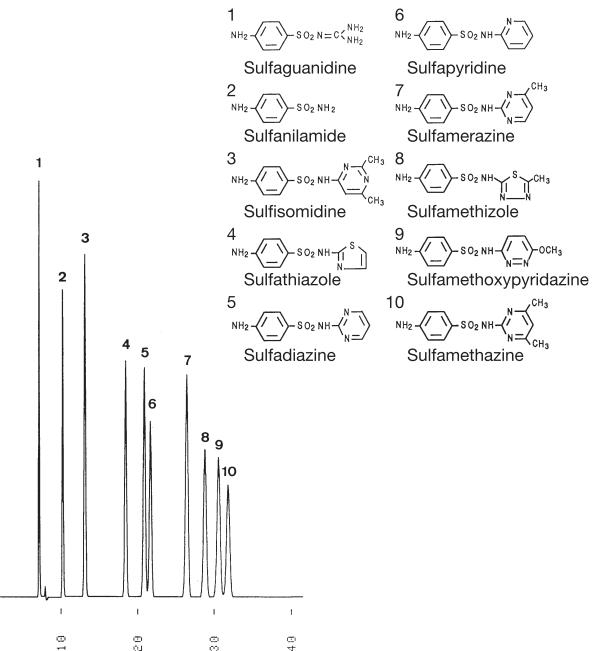
合成抗菌剤  
Antibacterial agents



(O950320G)

Column	: J'sphere ODS-M80 (4 $\mu$ m, 8 nm) 75 $\times$ 4.6 mm I.D.
Eluent	: acetonitrile/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (15/85)
Flow rate	: 1.0 mL/min
Temperature	: 37 °C
Detection	: UV at 230 nm, 0.16 AUFS
Injection	: 5 $\mu$ L (20 $\mu$ g/mL)

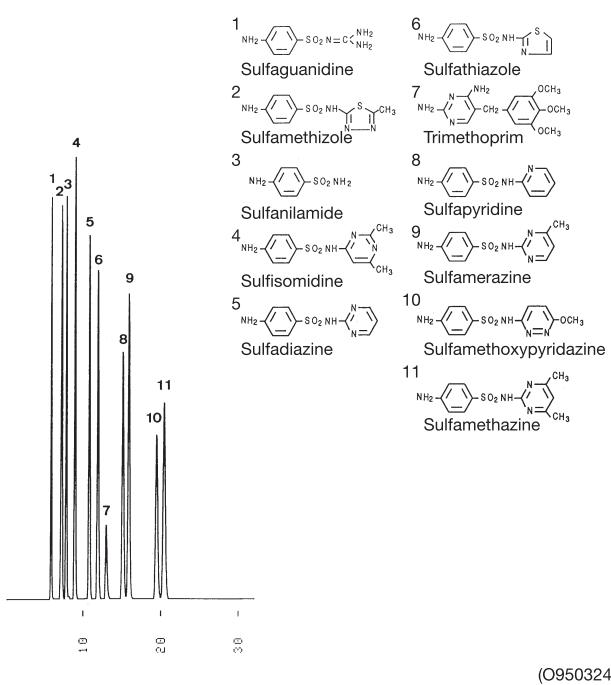
サルファ剤  
Sulfonamides



(O950306E)

Column	: J'sphere ODS-M80 (4 $\mu$ m, 8 nm) 250 $\times$ 4.6 mm I.D.
Eluent	: THF/50 mM NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub> (10/90)
Flow rate	: 0.5 mL/min
Temperature	: 37 °C
Detection	: UV at 275 nm, 0.16 AUFS
Injection	: 3 $\mu$ L (50 $\mu$ g/mL)

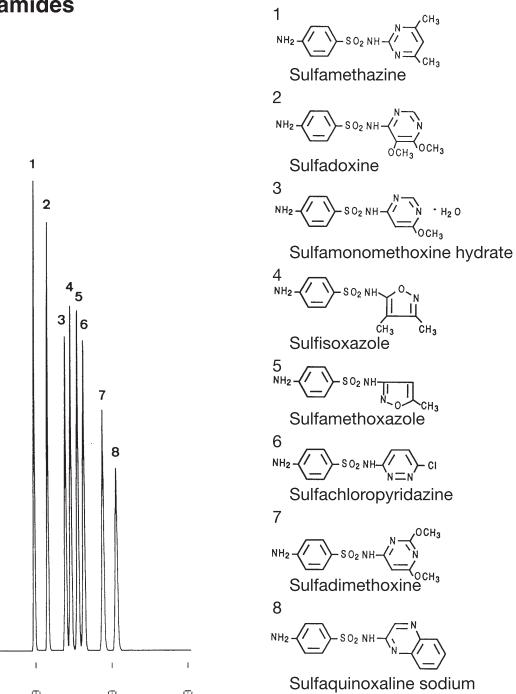
サルファ剤  
Sulfonamides



(O950324L)

Column : J'sphere ODS-H80 (4  $\mu\text{m}$ , 8 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 50 mM  $\text{NH}_4\text{H}_2\text{PO}_4$ -( $\text{NH}_4$ )<sub>2</sub> $\text{HPO}_4$  (pH 6.2)/THF (90/10)  
Flow rate : 0.5 mL/min  
Temperature : 37 °C  
Detection : UV at 275 nm, 0.16 AUFS  
Injection : 10  $\mu\text{L}$  (18  $\mu\text{g}/\text{mL}$ )

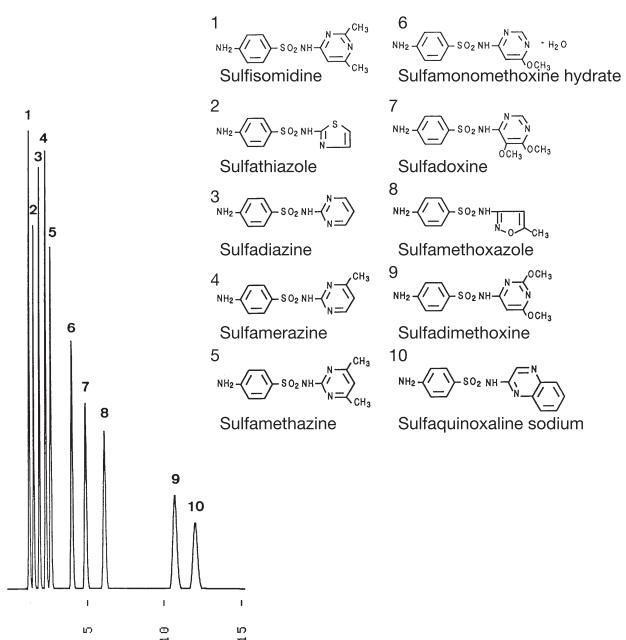
サルファ剤  
Sulfonamides



(O950302C)

Column : YMC-Pack ODS-A (5  $\mu\text{m}$ , 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : THF/water/acetic acid (30/70/1)  
Flow rate : 0.5 mL/min  
Temperature : 37 °C  
Detection : UV at 275 nm, 0.16 AUFS  
Injection : 5  $\mu\text{L}$  (42  $\mu\text{g}/\text{mL}$ )

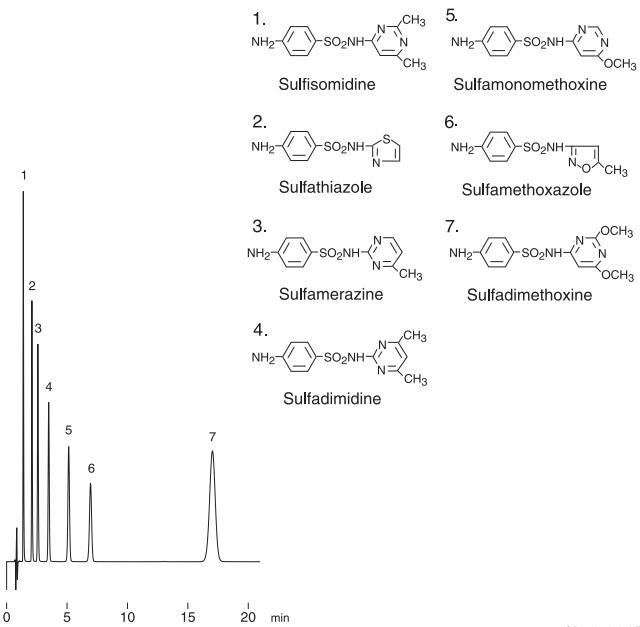
サルファ剤  
Sulfonamides



(O950217D)

Column : J'sphere ODS-M80 (4  $\mu\text{m}$ , 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/acetonitrile/50 mM  $\text{NH}_4\text{H}_2\text{PO}_4$  (15/5/80)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 275 nm, 0.16 AUFS  
Injection : 3  $\mu\text{L}$  (50  $\mu\text{g}/\text{mL}$ )

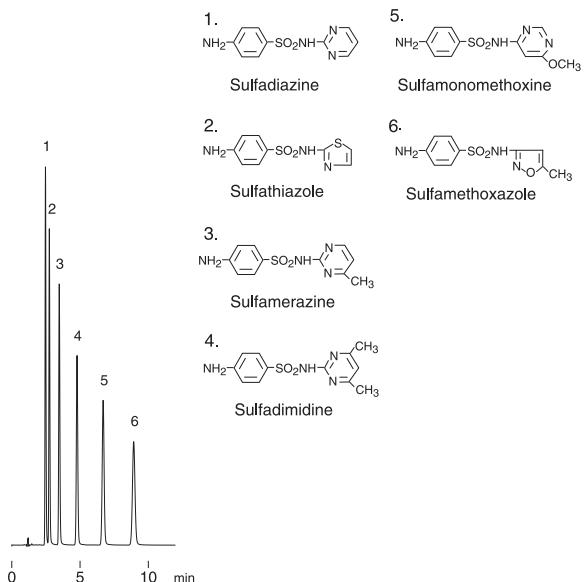
サルファ剤  
Sulfonamides



(J010321F)

Column : Hydrosphere C18 (3  $\mu\text{m}$ , 12 nm)  
50  $\times$  4.6 mm I.D.  
Eluent : 10 mM  $\text{CH}_3\text{COOH}$ - $\text{CH}_3\text{COONH}_4$  (pH 4.6)/acetonitrile (85/15)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 275 nm, 0.16 AUFS  
Injection : 10  $\mu\text{L}$  (0.01 ~ 0.04 mg/mL)

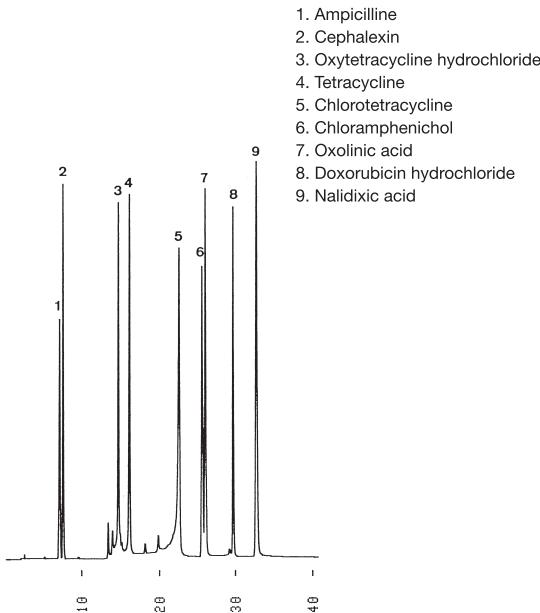
サルファ剤  
Sulfonamides



(J010130D)

Column : HydroSphere C18 (3  $\mu$ m, 12 nm)  
75  $\times$  2.0 mm I.D.  
Eluent : 10 mM CH<sub>3</sub>COOH-CH<sub>3</sub>COONH<sub>4</sub> (pH 4.6)/acetonitrile (85/15)  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : UV at 275 nm, 0.16 AUFS  
Injection : 2  $\mu$ L (0.02 mg/mL)

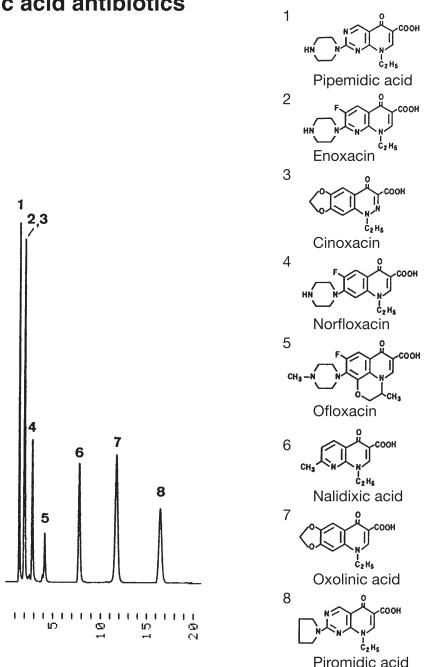
抗生物質  
Antibiotics



(G910523M)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (10/90)  
B) acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (50/50)  
0-55% B (0-30 min, linear), 55% B (30-40 min)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 250 nm, 0.16 AUFS  
Injection : 15  $\mu$ L (0.01 ~ 0.15 mg/mL)

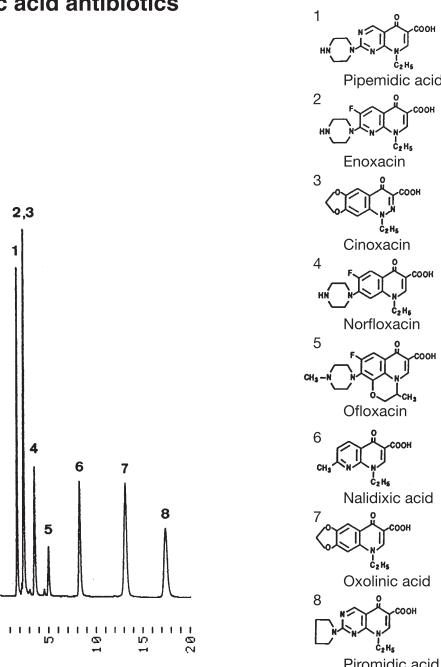
ナリジクス酸系抗生物質  
Nalidixic acid antibiotics



(O950428A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-(NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (pH 6.7)/tetrahydrofuran (90/10)  
containing 20 mM TBA·Br  
Flow rate : 1.0 mL/min  
Temperature : ambient (25 °C)  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 5  $\mu$ L (0.03 mg/mL)

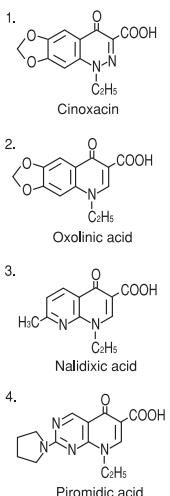
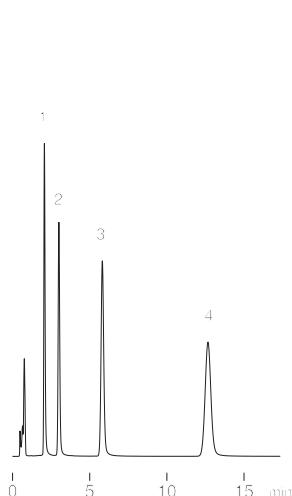
ナリジクス酸系抗生物質  
Nalidixic acid antibiotics



(O950428D)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-(NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (pH 6.7)/tetrahydrofuran (90/10)  
containing 20 mM TBA·Br  
Flow rate : 1.0 mL/min  
Temperature : ambient (25 °C)  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 5  $\mu$ L (0.03 mg/mL)

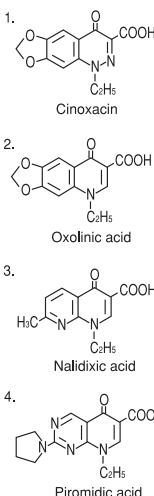
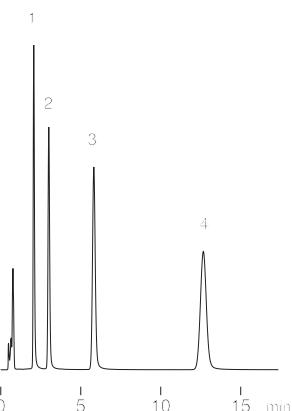
ナリジクス酸系抗生物質  
Nalidixic acid antibiotics



Column : Hydrosphere C18 (3  $\mu$ m, 12 nm)  
50  $\times$  2.0 mm I.D.  
Eluent : acetonitrile/50 mM NaH<sub>2</sub>PO<sub>4</sub> (25/75)  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.128 AUFS  
Injection : 1  $\mu$ L (0.02 ~ 0.1 mg/mL)

(A010324C)

ナリジクス酸系抗生物質  
Nalidixic acid antibiotics

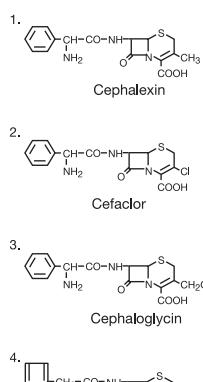
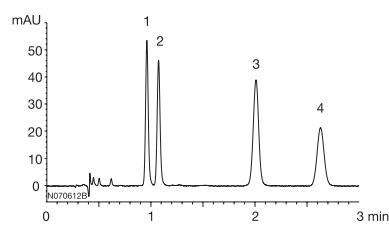


(A010324A)

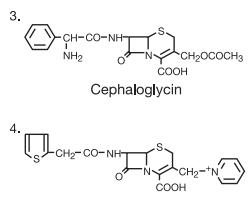
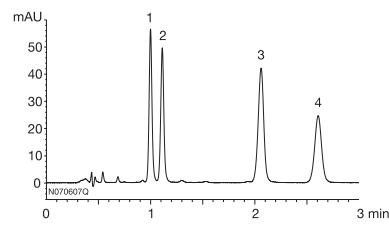
Column : Hydrosphere C18 (3  $\mu$ m, 12 nm)  
50  $\times$  2.0 mm I.D.  
Eluent : 10 mM CH<sub>3</sub>COOH-CH<sub>3</sub>COONH<sub>4</sub> (pH 4.3)/acetonitrile (75/25)  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.128 AUFS  
Injection : 1  $\mu$ L (0.02 ~ 0.1 mg/mL)

セフェム系抗生物質 - 2  $\mu$ m 粒子による高速分離  
Rapid separation of cephalosporin antibiotics

Column size : 50  $\times$  3.0 mm I.D.  
Flow rate : 0.8 mL/min  
Injection : 2  $\mu$ L



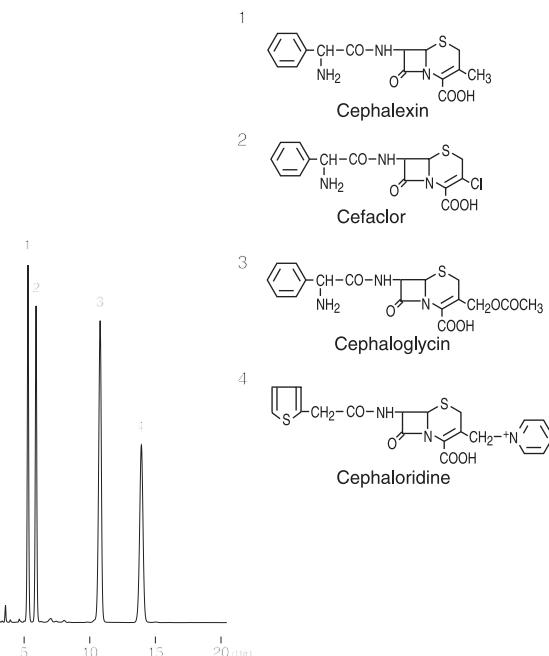
Column size : 50  $\times$  2.0 mm I.D.  
Flow rate : 0.36 mL/min  
Injection : 1  $\mu$ L



Column : YMC-UltraHT Pro C18 (2  $\mu$ m, 12 nm)  
Eluent : acetonitrile/20 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Temperature : 37 °C  
Detection : UV at 260 nm  
Sample : 0.1 ~ 0.2 mg/mL

(N070629A)

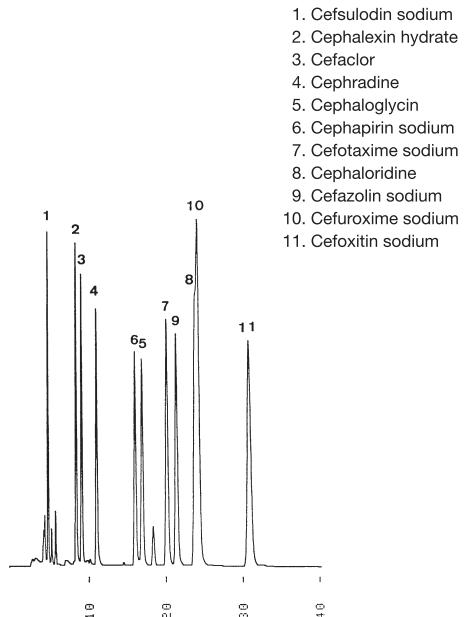
セフェム系抗生物質  
Cephalosporin antibiotics



(S000717B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/20 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 15  $\mu$ L (0.1 ~ 0.2 mg/mL)

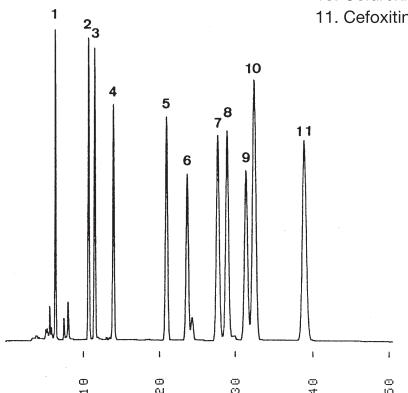
セフェム系抗生物質  
Cephalosporin antibiotics



(O940719A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/100 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.12 ~ 0.35 mg/mL)

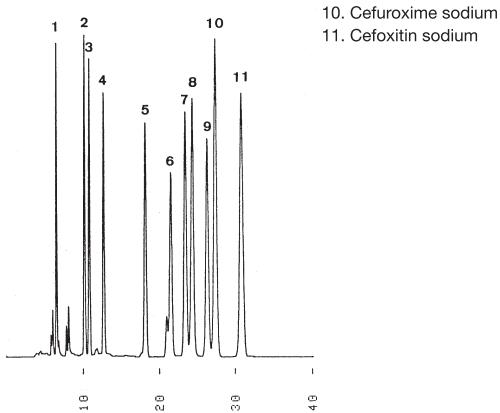
セフェム系抗生物質  
Cephalosporin antibiotics



(O940715F)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/100 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.12 ~ 0.35 mg/mL)

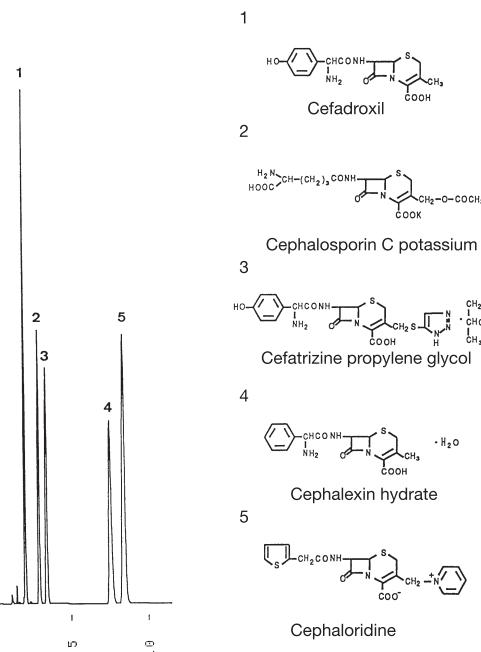
セフェム系抗生物質  
Cephalosporin antibiotics



(O940718B)

Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/100 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.12 ~ 0.35 mg/mL)

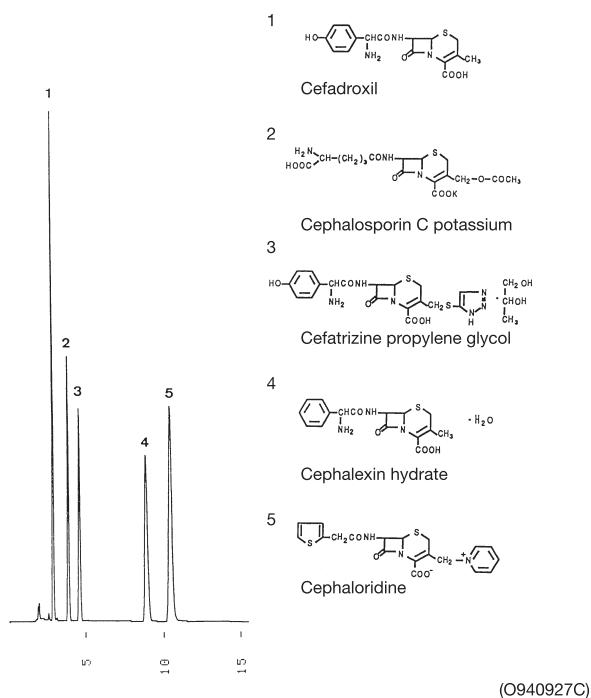
セフェム系抗生物質  
Cephalosporin antibiotics



(O940927B)

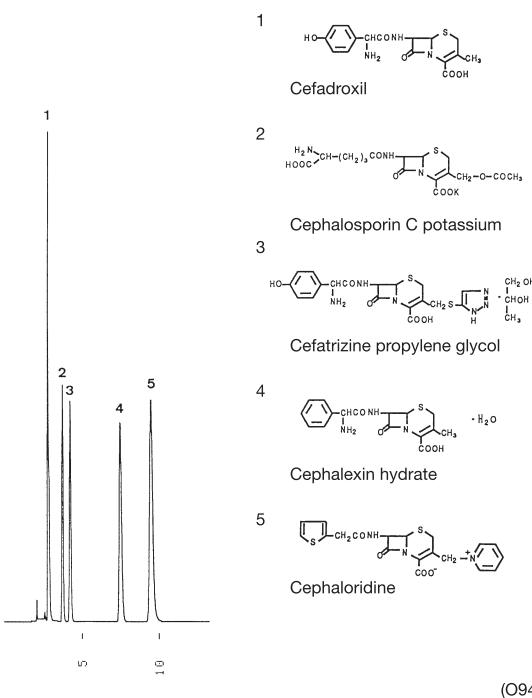
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (10/85/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.2 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



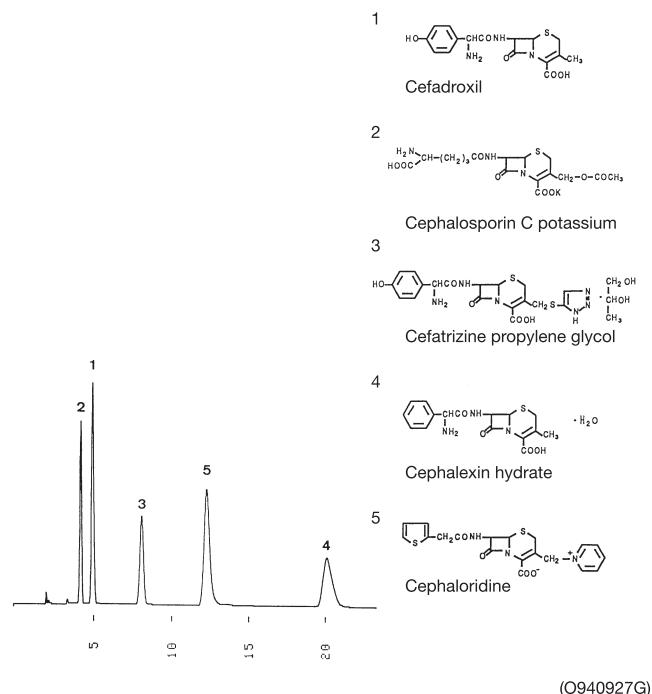
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (10/85/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.2 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



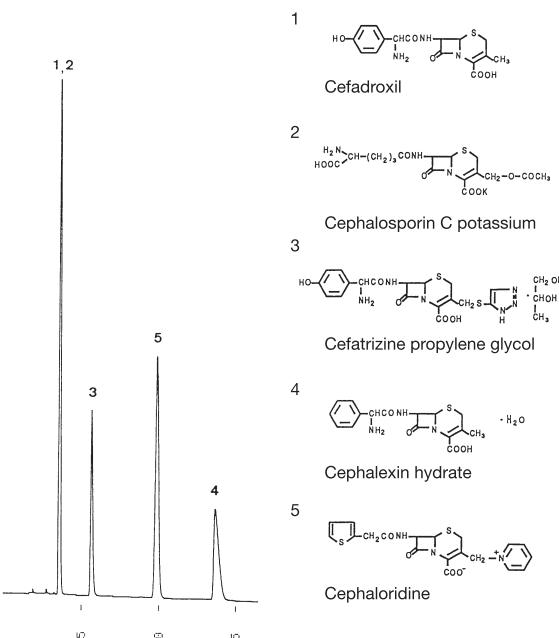
Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (10/85/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.2 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



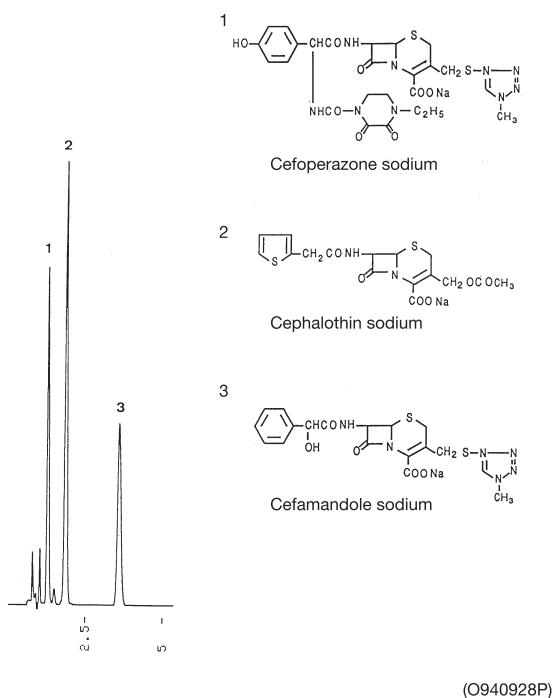
Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (10/85/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.2 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



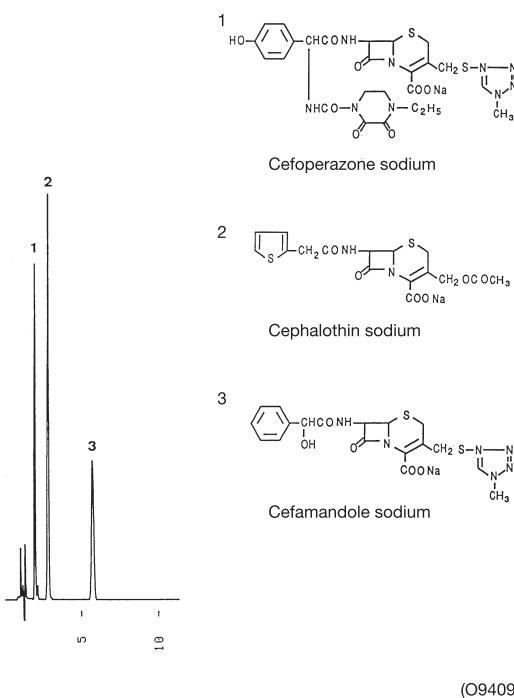
Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water/acetic acid (10/85/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.2 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



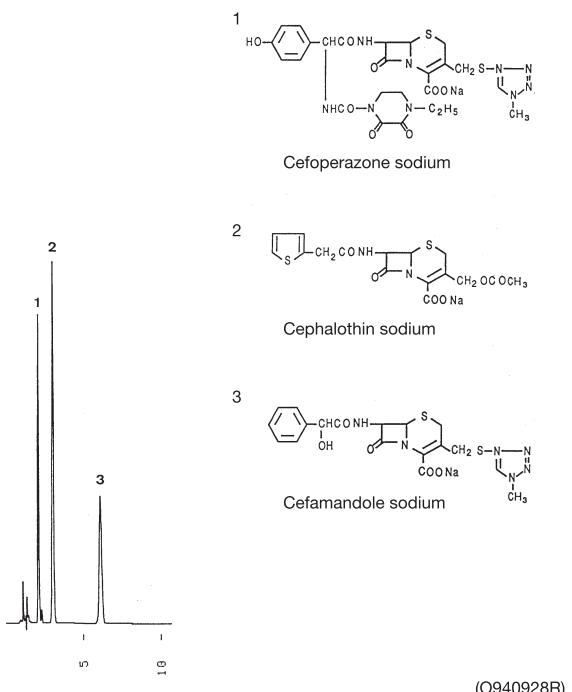
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (15/85)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.17 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



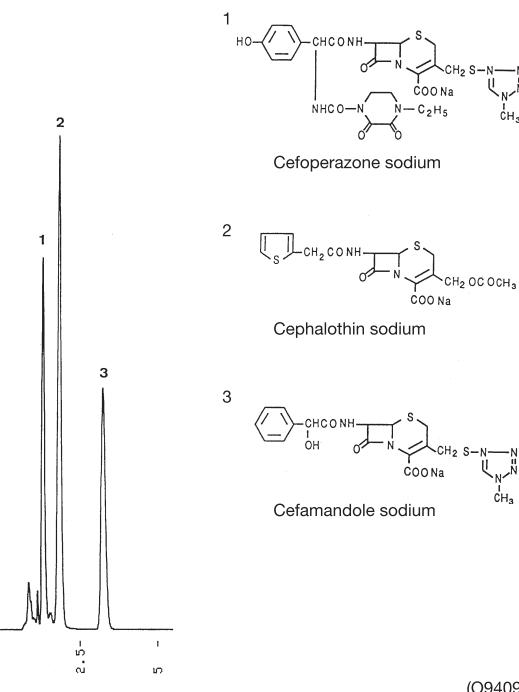
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (15/85)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.17 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



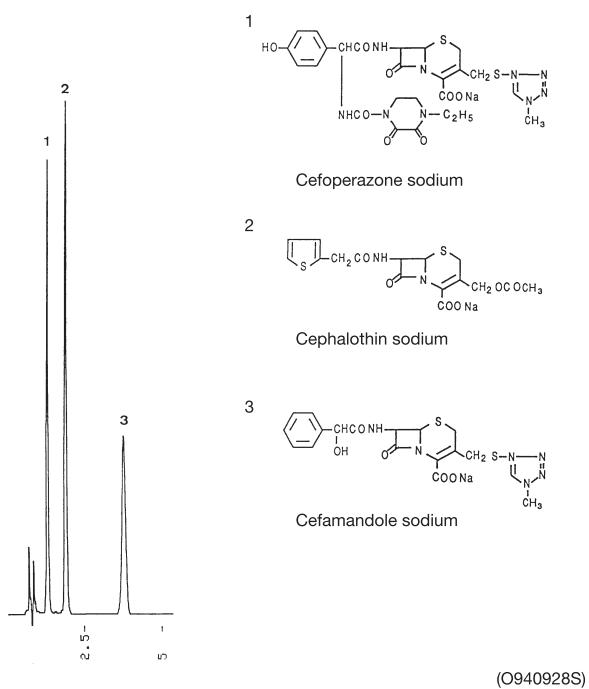
Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (15/85)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.17 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



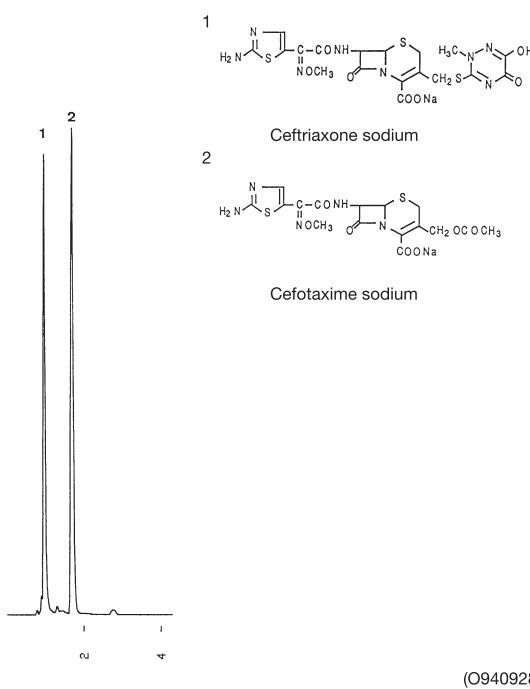
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  2.0 mm I.D.  
Eluent : THF/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (15/85)  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 3  $\mu$ L (0.17 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



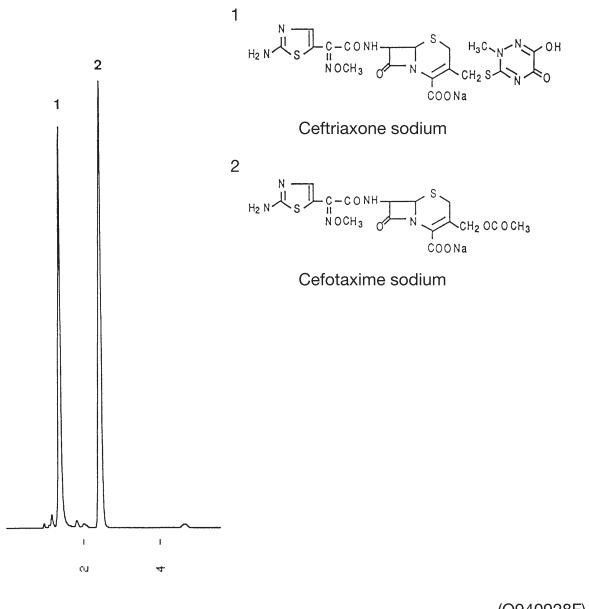
Column : YMC-Pack ODS-A (3  $\mu$ m, 12 nm)  
50  $\times$  4.6 mm I.D.  
Eluent : THF/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (15/85)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 6  $\mu$ L (0.17 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



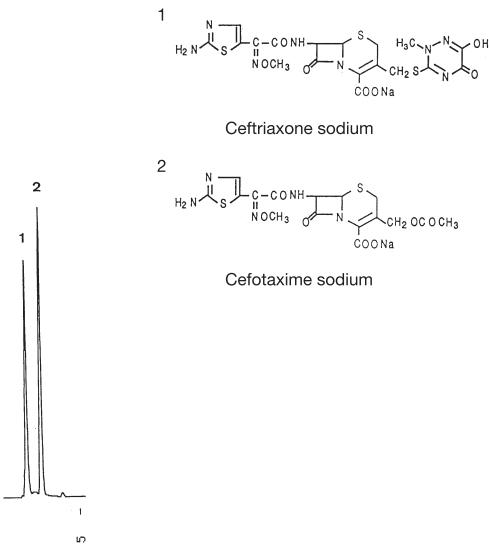
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.08, 0.16 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



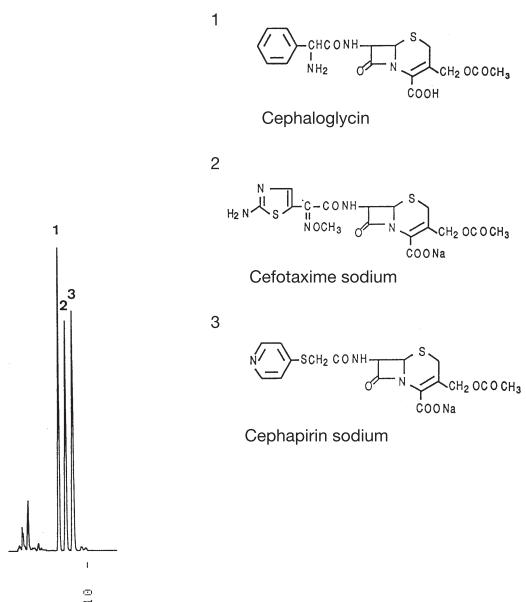
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.08, 0.16 mg/mL)

セフェム系抗生物質  
Cephalosporin antibiotics



Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  2.0 mm I.D.  
Eluent : methanol/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (30/70)  
Flow rate : 0.2 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 3  $\mu$ L (0.08, 0.16 mg/mL)

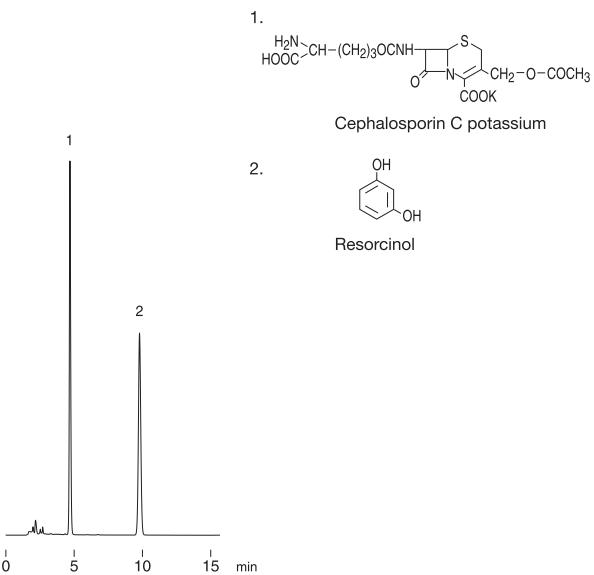
セフェム系抗生物質  
Cephalosporin antibiotics



(O940720A)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/100 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.64 AUFS  
Injection : 5  $\mu$ L (0.5 mg/mL)

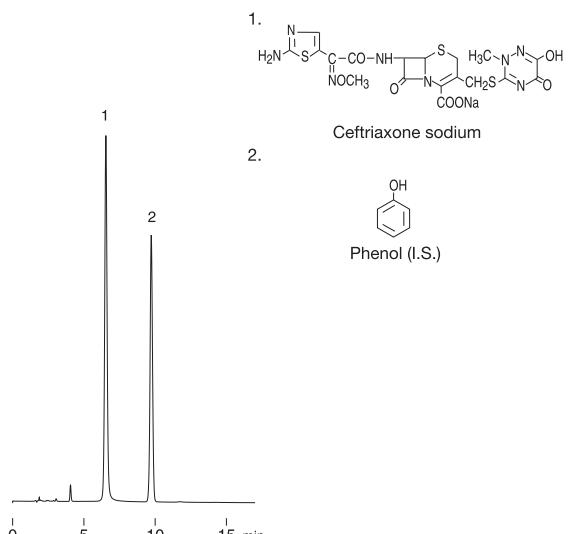
セファロスポリン C  
Cephalosporin C



(S000714B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/20 mM KH<sub>2</sub>PO<sub>4</sub> (5/95)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.2 mg/mL)

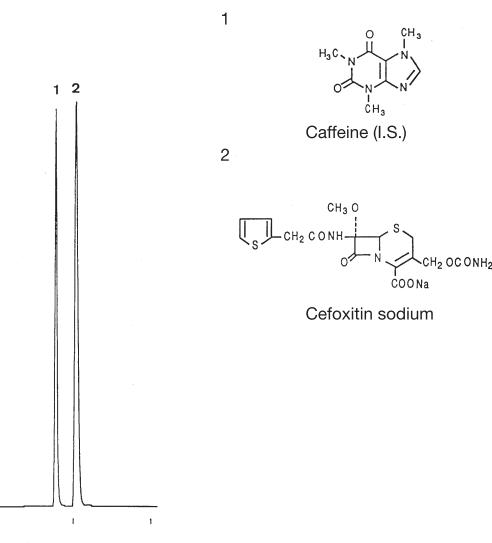
セフトリアキソン  
Ceftriaxone



(S000726B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/10 mM H<sub>3</sub>PO<sub>4</sub> (25/75)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.1, 0.4 mg/mL)

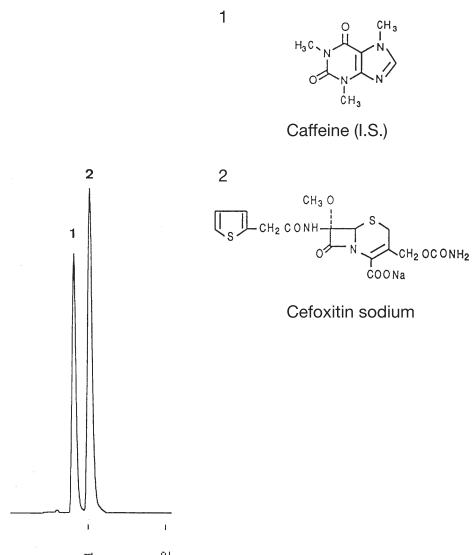
セフォキシチンナトリウム  
Cefoxitin sodium



(O940728M)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/50 mM KH<sub>2</sub>PO<sub>4</sub> (20/80)  
Flow rate : 1.8 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 1.2  $\mu$ L (8, 12 mg/mL)

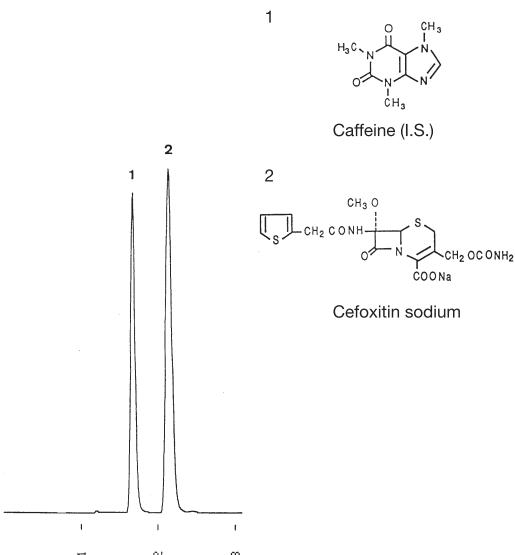
セフォキシチンナトリウム  
Cefoxitin sodium



(O940728P)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  2.0 mm I.D.  
Eluent : acetonitrile/50 mM KH<sub>2</sub>PO<sub>4</sub> (20/80)  
Flow rate : 0.34 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 1.2  $\mu$ L (1.6, 2.4 mg/mL)

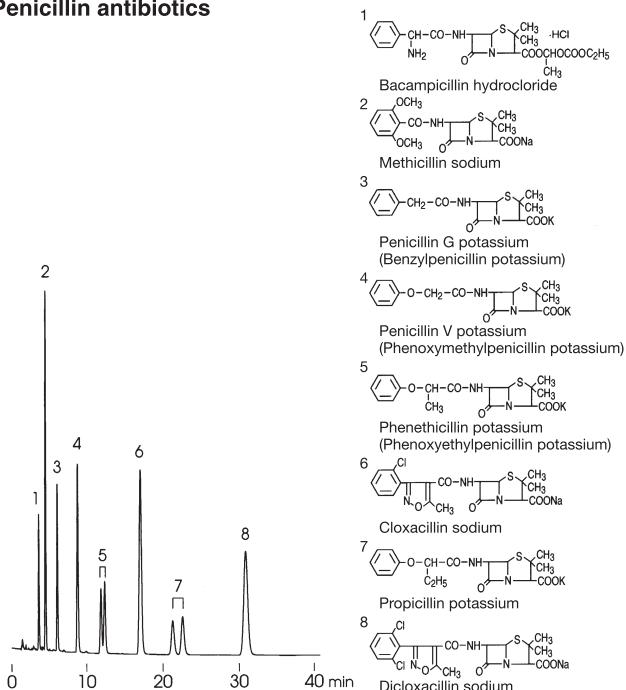
セフォキシチンナトリウム  
Cefoxitin sodium



(O940729A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  2.0 mm I.D.  
Eluent : acetonitrile/50 mM KH<sub>2</sub>PO<sub>4</sub> (20/80)  
Flow rate : 0.34 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 1.2  $\mu$ L (1.6, 2.4 mg/mL)

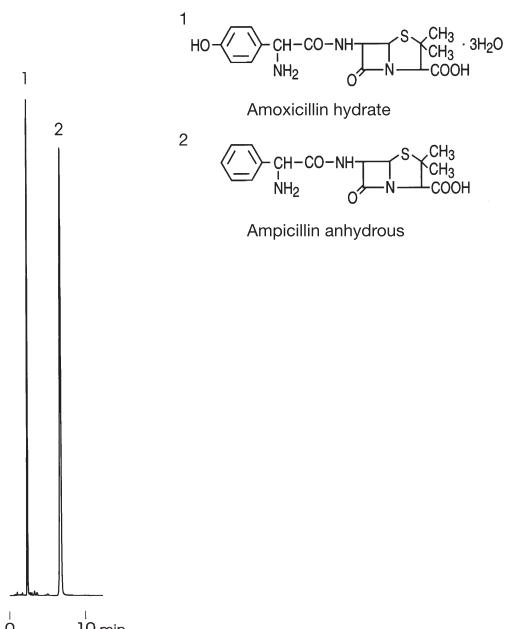
ペニシリン系抗生物質  
Penicillin antibiotics



(O950908A)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 50 mM NaH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.3)/acetonitrile (67/33)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.26 AUFS  
Injection : 8  $\mu$ L (0.13 mg/mL)

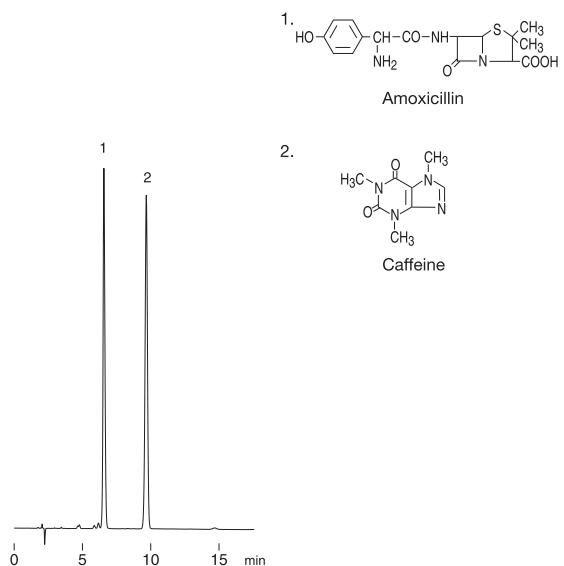
ペニシリン系抗生物質  
Penicillin antibiotics



(O950920C)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : 50 mM NaH<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 2.3)/acetonitrile (80/20)  
containing 20 mM sodium 1-heptanesulfonate  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.13 AUFS  
Injection : 2  $\mu$ L (0.3, 0.7 mg/mL)

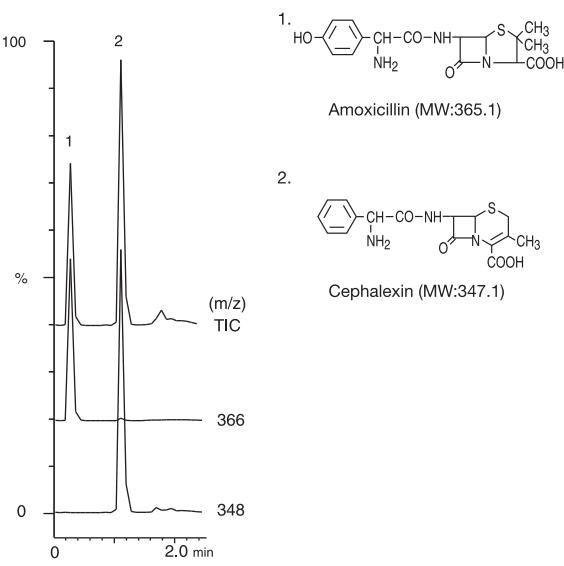
アモキシシリン  
Amoxicillin



(S000622D)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (10/90/0.1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 220 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.2, 0.1 mg/mL)

抗生物質の高速分離 - LC/MS  
Rapid separation of antibiotics - LC/MS

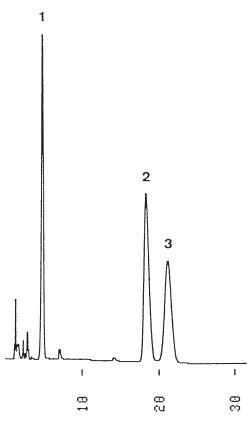


(A020620A)

Column : LC/MS Cartridge Column VA  
Pro C18 (3  $\mu$ m, 12 nm)  
20  $\times$  2.0 mm I.D.  
Eluent : A) water/formic acid (100/0.05)  
B) methanol/formic acid (100/0.05)  
10-90% B (0-0.5 min), 90% B (0.5-1.0 min)  
Flow rate : 0.6 mL/min  
Temperature : 37 °C  
Detection : ESI-positive mode  
Injection : 2  $\mu$ L

エリスロマイシン  
Erythromycin antibiotic drugs

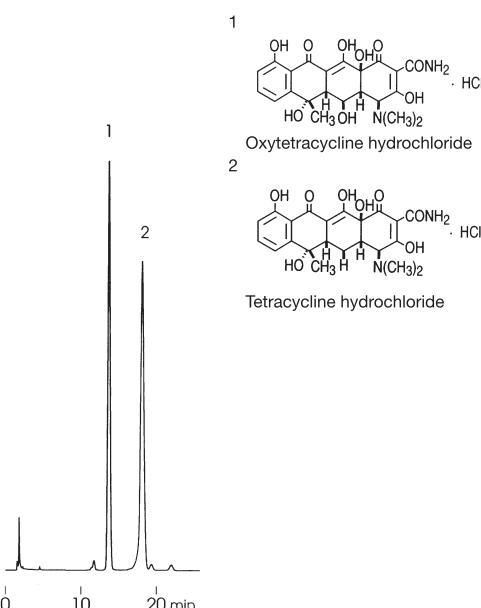
1. Erythromycin
2. Erythromycin ethylsuccinate
3. Erythromycin estolate



(S930910B)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/methanol/100 mM (NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (45/15/40)  
Flow rate : 1.0 mL/min  
Temperature : 45 °C  
Detection : UV at 210 nm, 0.26 AUFS  
Injection : 15  $\mu$ L (2.5 mg/mL)

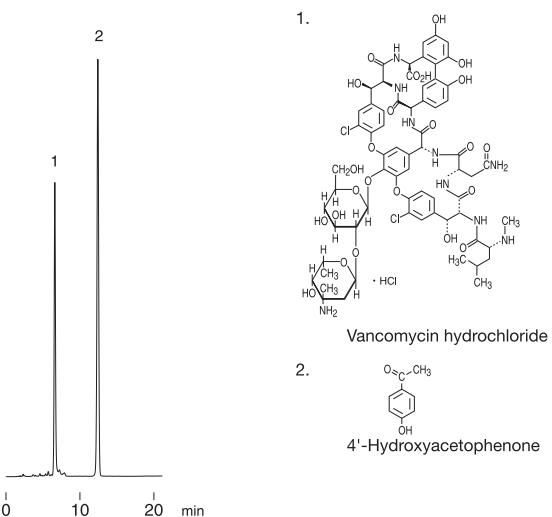
テトラサイクリン系抗生物質  
Tetracycline antibiotics



(S970524D)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/10 mM oxalic acid (10/90)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 280 nm, 0.13 AUFS  
Injection : 6  $\mu$ L (0.2 mg/mL)

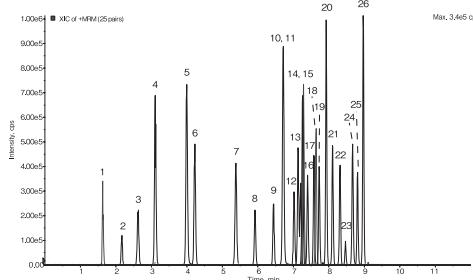
### バンコマイシン Vancomycin



(S000728B)

Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
           150  $\times$  4.6 mm I.D.  
 Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/acetonitrile  
           (88/12)  
 Flow rate : 1.0 mL/min  
 Temperature : 37 °C  
 Detection : UV at 220 nm, 0.32 AUFS  
 Injection : 10  $\mu$ L (0.1 mg/mL)

LC/MSによる農薬一斉分析 - 2 μm カラムによる高速分析  
Simultaneous separation of pesticides by LC/MS - fast LC



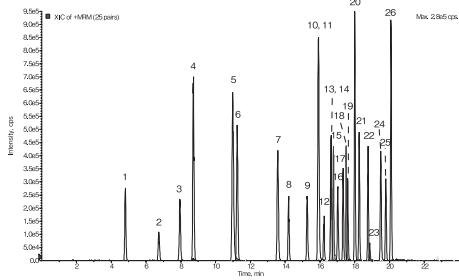
1. Thiamethoxam (Q1/Q3 : 292.3/211.3)  
2. Clothianidin (Q1/Q3 : 250.3/169.1)  
3. Chlordazon (Q1/Q3 : 222.3/77.0)  
4. Thiacyclorpид (Q1/Q3 : 253.3/126.0)  
5. Thiabendazole (Q1/Q3 : 202.3/175.2)  
6. Azamethiphos (Q1/Q3 : 325.2/183.0)  
7. Dimethirimol (Q1/Q3 : 210.4/71.1)  
8. Isoxaflutole (Q1/Q3 : 360.2/251.1)  
9. Pyridalid (Q1/Q3 : 319.3/139.1)  
10. (E)-Ferimzone (Q1/Q3 : 255.4/91.1)  
11. (Z)-Ferimzone (Q1/Q3 : 255.4/91.1)  
12. Methoxyfenozide (Q1/Q3 : 369.4/149.3)  
13. Iprovalicarb (Q1/Q3 : 321.4/119.3)  
14. Chromafenoxide (Q1/Q3 : 395.4/175.1)  
15. Butafenacil (Q1/Q3 : 492.1/331.1)  
16. Simeconazole (Q1/Q3 : 249.3/70.1)  
17. Cyazofamid (Q1/Q3 : 325.2/108.0)  
18. Naproanilide (Q1/Q3 : 292.3/171.3)  
19. Fenoxycarb (Q1/Q3 : 302.3/88.1)  
20. Anilofos (Q1/Q3 : 368.2/199.1)  
21. Cyflufenamid (Q1/Q3 : 431.3/295.2)  
22. Pyrazolynate (Q1/Q3 : 439.1/91.0)  
23. Indoxacarb (Q1/Q3 : 528.1/203.2)  
24. Benzofenap (Q1/Q3 : 431.2/105.1)  
25. Furathiocarb (Q1/Q3 : 383.3/195.2)  
26. Cloquintocet-mexyl (Q1/Q3 : 336.3/238.2)

Courtesy of J. Watanabe, TAKARA BIO INC.

(S080702B)

Column	: YMC-UltraHT Pro C18 (2 μm, 12 nm) 75 × 2.0 mm I.D.
Eluent	: A) 5 mM CH <sub>3</sub> COONH <sub>4</sub> in water B) 5 mM CH <sub>3</sub> COONH <sub>4</sub> in methanol 15-40% B (0-0.5 min), 40% B (0.5-1.75 min), 40-50% B (1.75-3 min), 50-55% B (3-4 min), 55-95% B (4-8.75 min), 95% B (8.75-11 min)
Flow rate	: 0.4 mL/min
Temperature	: ambient
Detection	: API5000, ESI, Positive, MRM
Injection	: 3 μL (10 ng/mL)
Sample	: Pesticide Mixture Standard Solution PL-7-2, manufactured by Wako Pure Chemical Industries, Ltd.

LC/MSによる農薬一斉分析  
Simultaneous separation of pesticides by LC/MS



1. Thiamethoxam (Q1/Q3 : 292.3/211.3)  
2. Clothianidin (Q1/Q3 : 250.3/169.1)  
3. Chlordazon (Q1/Q3 : 222.3/77.0)  
4. Thiacyclorpид (Q1/Q3 : 253.3/126.0)  
5. Thiabendazole (Q1/Q3 : 202.3/175.2)  
6. Azamethiphos (Q1/Q3 : 325.2/183.0)  
7. Dimethirimol (Q1/Q3 : 210.4/71.1)  
8. Isoxaflutole (Q1/Q3 : 360.2/251.1)  
9. Pyridalid (Q1/Q3 : 319.3/139.1)  
10. (E)-Ferimzone (Q1/Q3 : 255.4/91.1)  
11. (Z)-Ferimzone (Q1/Q3 : 255.4/91.1)  
12. Methoxyfenozide (Q1/Q3 : 369.4/149.3)  
13. Iprovalicarb (Q1/Q3 : 321.4/119.3)  
14. Chromafenoxide (Q1/Q3 : 395.4/175.1)  
15. Butafenacil (Q1/Q3 : 492.1/331.1)  
16. Simeconazole (Q1/Q3 : 249.3/70.1)  
17. Cyazofamid (Q1/Q3 : 325.2/108.0)  
18. Naproanilide (Q1/Q3 : 292.3/171.3)  
19. Fenoxycarb (Q1/Q3 : 302.3/88.1)  
20. Anilofos (Q1/Q3 : 368.2/199.1)  
21. Cyflufenamid (Q1/Q3 : 431.3/295.2)  
22. Pyrazolynate (Q1/Q3 : 439.1/91.0)  
23. Indoxacarb (Q1/Q3 : 528.1/203.2)  
24. Benzofenap (Q1/Q3 : 431.2/105.1)  
25. Furathiocarb (Q1/Q3 : 383.3/195.2)  
26. Cloquintocet-mexyl (Q1/Q3 : 336.3/238.2)

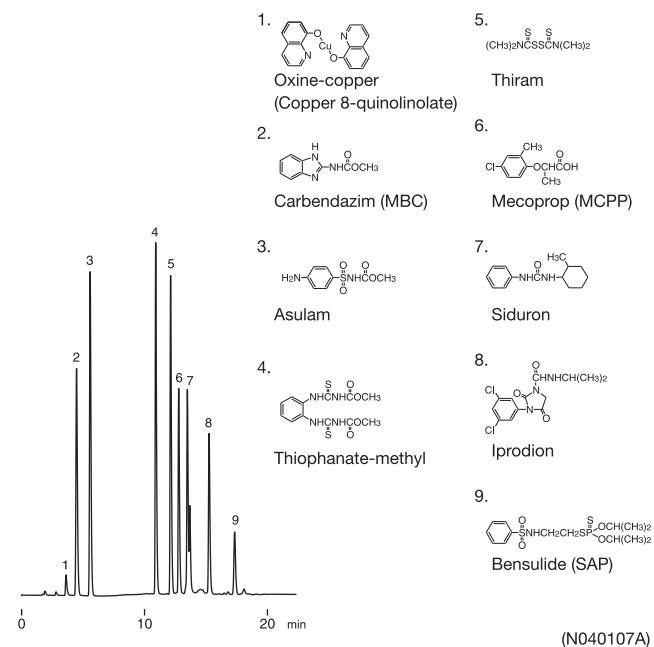
Courtesy of J. Watanabe, TAKARA BIO INC.

(S080702A)

Column	: YMC-Pack Pro C18 (3 μm, 12 nm) 150 × 2.0 mm I.D.
Eluent	: A) 5 mM CH <sub>3</sub> COONH <sub>4</sub> in water B) 5 mM CH <sub>3</sub> COONH <sub>4</sub> in methanol 15-40% B (0-1 min), 40% B (1-3.5 min), 40-55% B (3.5-6 min), 50-55% B (6-8 min), 55-95% B (8-17.5 min), 95% B (17.5-22 min)
Flow rate	: 0.2 mL/min
Temperature	: ambient
Detection	: API5000, ESI, Positive, MRM
Injection	: 3 μL (10 ng/mL)
Sample	: Pesticide Mixture Standard Solution PL-7-2, manufactured by Wako Pure Chemical Industries, Ltd.

LC/MS による農薬等の一斉試験法 I ( 農産物 ) 準拠

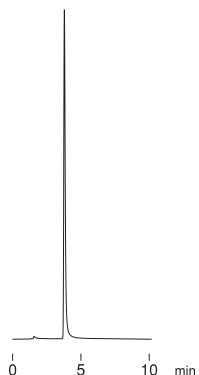
水質規制農薬 9 成分  
Analysis of 9 pesticides



Column	: Hydrosphere C18 (5 μm, 12 nm) 150 × 4.6 mm I.D.
Eluent	: A) 50 mM KH <sub>2</sub> PO <sub>4</sub> -H <sub>3</sub> PO <sub>4</sub> (pH 3.0) B) acetonitrile 15-65% B (0-10 min), 65% B (10-20 min)
Flow rate	: 1.0 mL/min
Temperature	: 40 °C
Detection	: UV at 270 nm (0-6.5 min), 230 nm (6.5-20 min) 0.08 AUFS
Injection	: 10 μL (10 μg/mL)

オキシン銅  
Copper 8-quinolinolate

1. Copper 8-quinolinolate



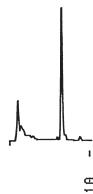
(A010717A)

Column	: Hydrosphere C18 (5 μm, 12 nm) 150 × 2.0 mm I.D.
Eluent	: acetonitrile/20 mM H <sub>3</sub> PO <sub>4</sub> (5/95)
Flow rate	: 0.2 mL/min
Temperature	: 37 °C
Detection	: UV at 250 nm, 0.32 AUFS
Injection	: 2 μL (0.02 mg/mL)

ベンスリド

O,O-Di-isopropyl S-2-benzenesulphonamidoethylphosphorodithioate

1. Bensulide



(G910223E)

Column : YMC-Pack MB-ODS  
150 × 2.1 mm I.D.  
Eluent : acetonitrile/water (60/40)  
Flow rate : 0.3 mL/min  
Temperature : 30 °C  
Detection : UV at 220 nm, 0.01 AUFS  
Injection : 10 µL (1.0 mg/L)

アシュラム  
Methyl sulfanilycarbamate

1. Asulam



(G910223C)

Column : YMC-Pack MB-ODS  
150 × 2.1 mm I.D.  
Eluent : THF/water/TFA (10/90/0.05)  
Flow rate : 0.3 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.01 AUFS  
Injection : 10 µL (1.0 mg/L)

チウラム  
Bis(dimethylthiocarbamoyl) disulfide

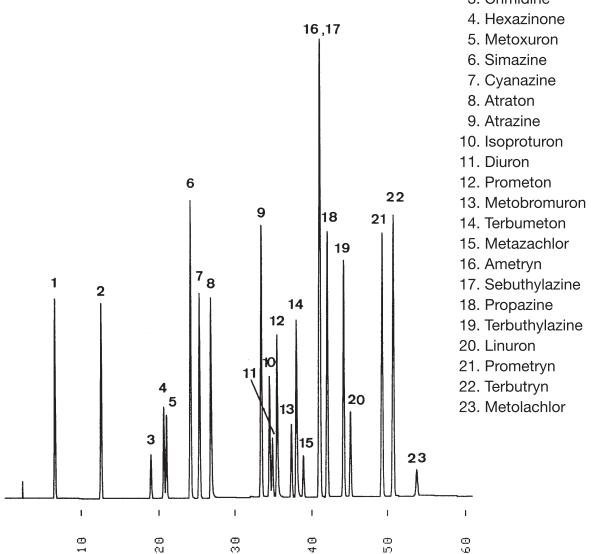
1. Thiram



(G910223D)

Column : YMC-Pack MB-ODS  
150 × 2.1 mm I.D.  
Eluent : acetonitrile/water (40/60)  
Flow rate : 0.3 mL/min  
Temperature : 30 °C  
Detection : UV at 260 nm, 0.01 AUFS  
Injection : 10 µL (2.0 mg/L)

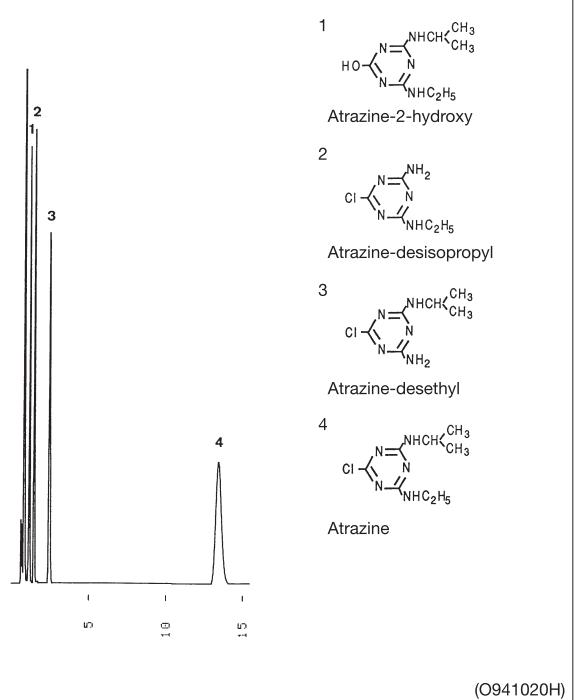
除草剤  
Herbicides



(O941018B)

Column : J'sphere ODS-H80 (4 µm, 8 nm)  
250 × 4.6 mm I.D.  
Eluent : A) acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (20/80)  
B) acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (65/35)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.16 AUFS  
Injection : 5 µL (0.04 mg/mL)

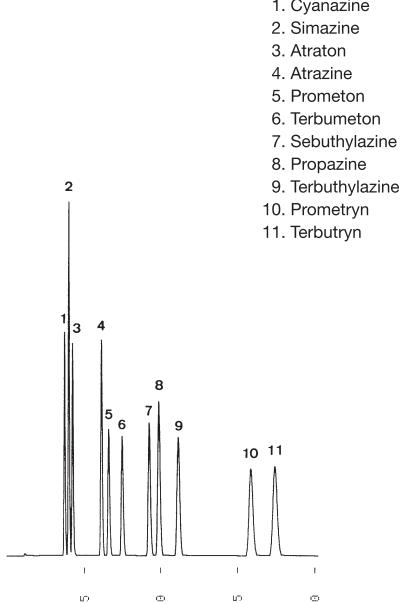
アトラジン誘導体  
Atrazine derivatives



(O941020H)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/TFA (25/75/0.1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.04 mg/mL)

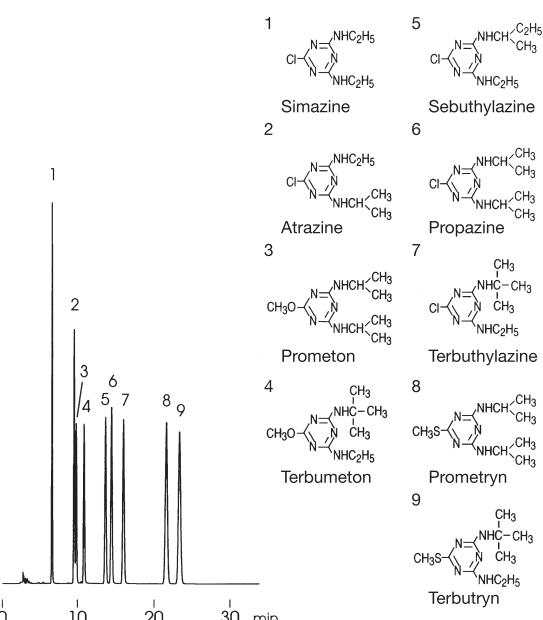
トリアジン系除草剤  
Triazine herbicides



(O941102F)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (45/55)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.32 AUFS  
Injection : 5  $\mu$ L (0.05 mg/mL)

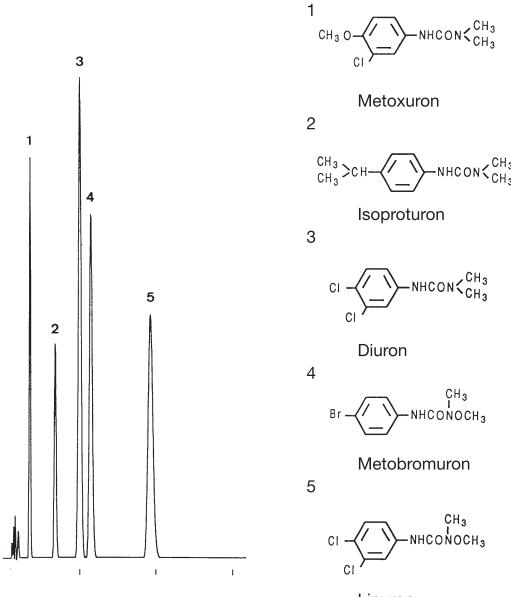
トリアジン系除草剤  
Triazine herbicides



(A970210B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (45/55)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.32 AUFS  
Injection : 5  $\mu$ L (0.05 mg/mL)

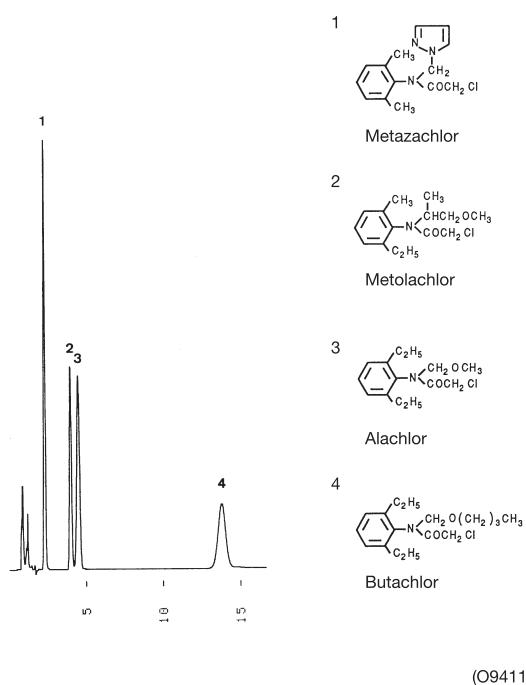
尿素系除草剤  
Urea herbicides



(O941028B)

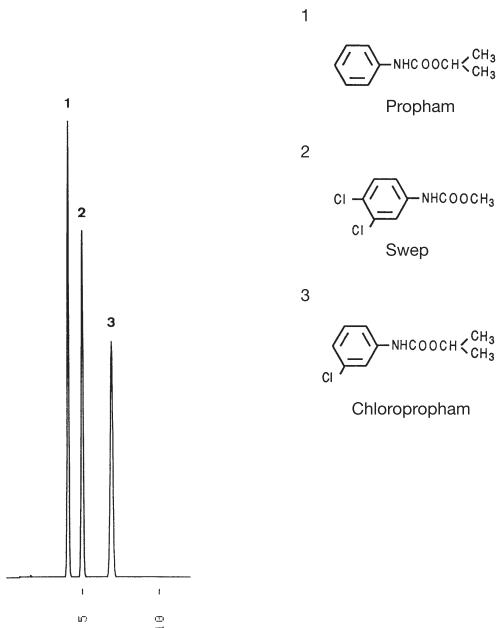
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : THF/water (30/70)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.16 AUFS  
Injection : 4  $\mu$ L (0.2 mg/mL)

酸アミド系除草剤  
Acid amide herbicides



Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : 2-propanol/THF/water (25/15/60)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 210 nm, 0.16 AUFS  
Injection : 8  $\mu$ L (0.05 mg/mL)

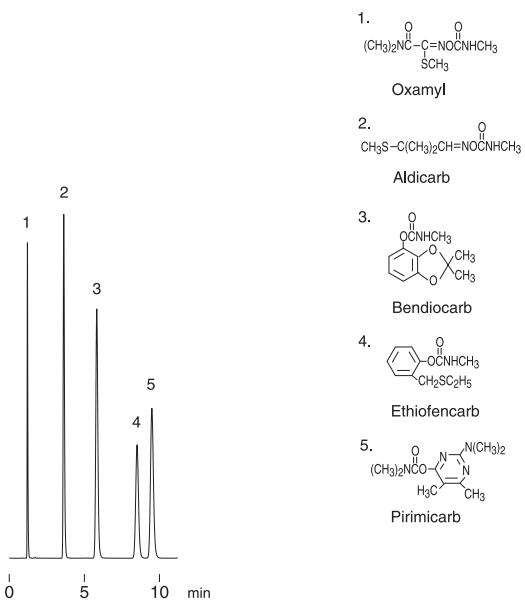
カルバメート系除草剤  
Carbamate herbicides



(O941124G)

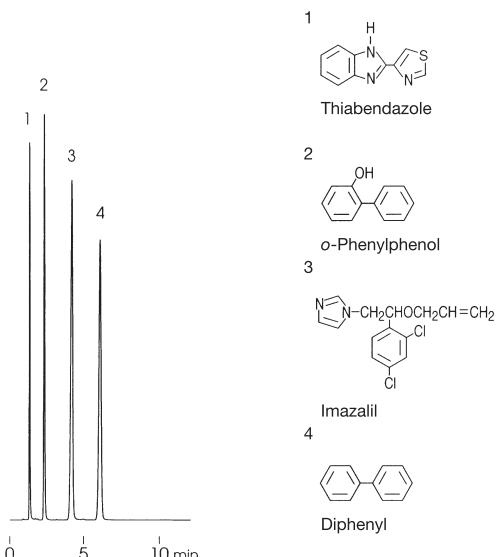
Column : J'sphere ODS-L80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (45/55)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 240 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.08 mg/mL)

カルバメート系殺虫剤  
Carbamate insecticides



Column : Hydrosphere C18 (3  $\mu$ m, 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/20 mM KH<sub>2</sub>PO<sub>4</sub> (45/55)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 240 nm, 0.64 AUFS  
Injection : 5  $\mu$ L (0.1 ~ 1.5 mg/mL)

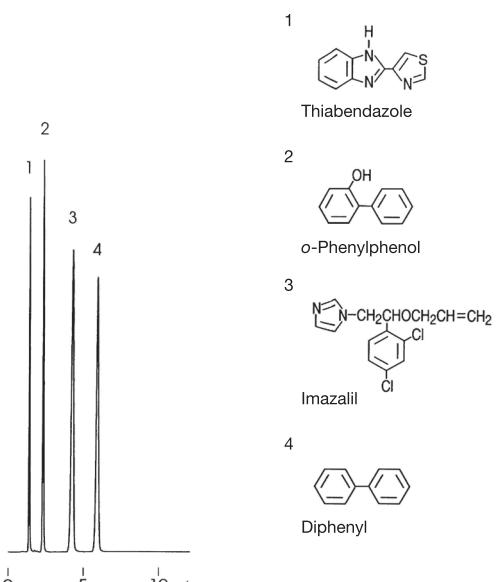
防かび剤  
Fungicides



(A970217A)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.02 ~ 0.20 mg/mL)

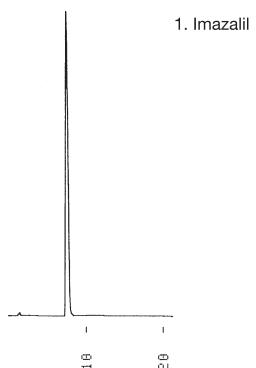
防かび剤  
Fungicides



(A970219A)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : methanol/20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (70/30)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.02 ~ 0.20 mg/mL)

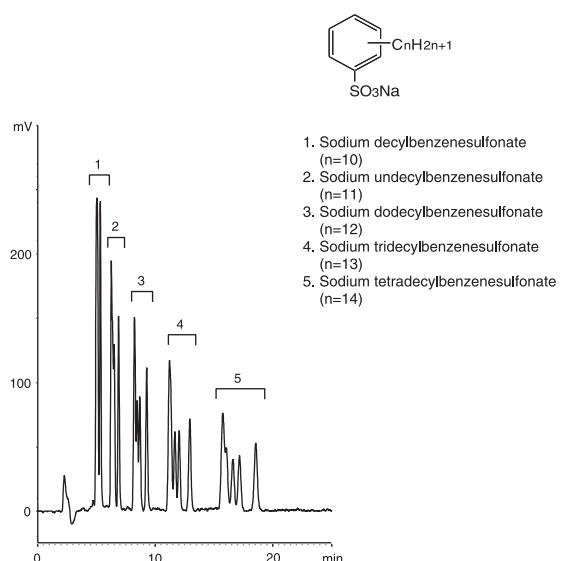
イマザリル  
Imazalil



(B931007A)

Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> (50/50)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.04 AUFS  
Injection : 10  $\mu$ L (0.05 mg/mL)

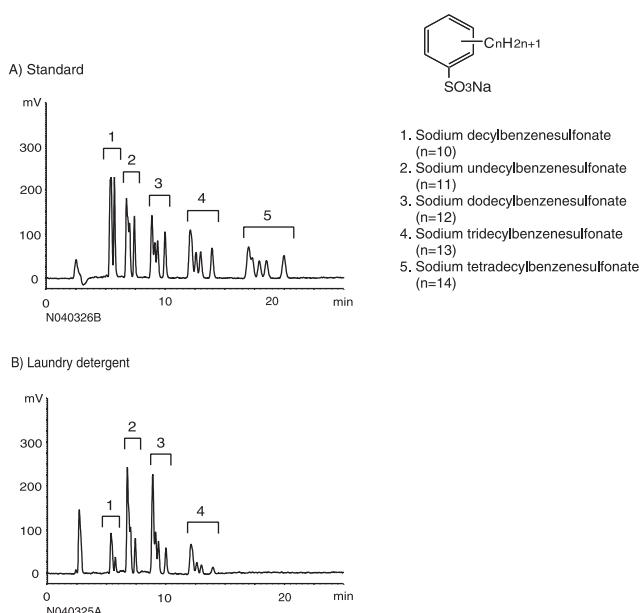
陰イオン界面活性剤  
Anionic surfactants



(N040324D)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (65/35) containing 0.1 M NaClO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : FLS at Ex 221 nm, Em 284 nm  
Injection : 20  $\mu$ L (2.0  $\mu$ g/mL)  
(平成 15 年改正水質基準の検査方法準拠)

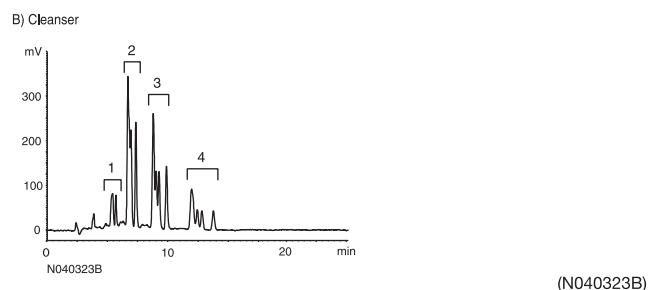
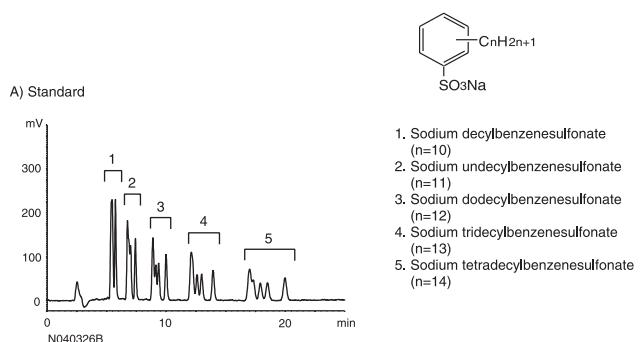
市販洗濯洗剤中の陰イオン界面活性剤  
Anionic surfactants in a commercial laundry detergent



(N040325A)

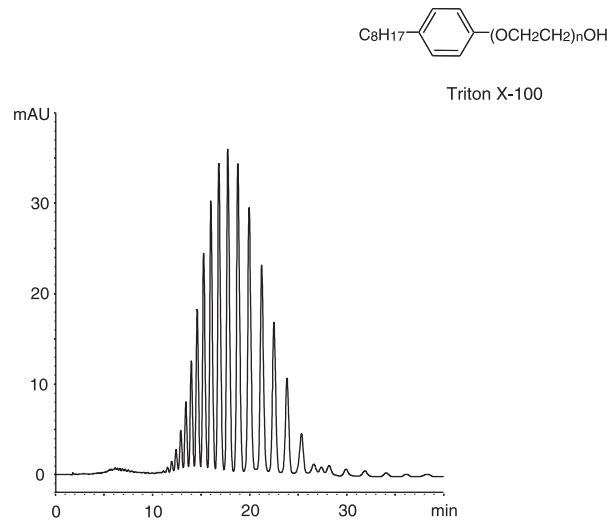
Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (65/35) containing 0.1 M NaClO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : FLS at Ex 221 nm, Em 284 nm  
Injection : 20  $\mu$ L  
Sample : A) 2.0  $\mu$ g/mL  
B) 25  $\mu$ g/mL (water solution of laundry detergent powder)

市販クレンザー中の陰イオン界面活性剤  
Anionic surfactants in a commercial cleanser



Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (65/35) containing 0.1 M NaClO<sub>4</sub>  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : FLS at Ex 221 nm, Em 284 nm  
Injection : 20  $\mu$ L  
Sample : A) 2.0  $\mu$ g/mL  
B) 250  $\mu$ g/mL (water solution of powder cleanser)

非イオン性界面活性剤  
Nonionic surfactants

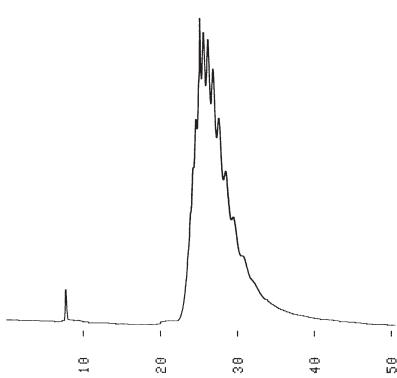


(N040308D)

Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : THF/acetonitrile/water (10/45/45)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 10  $\mu$ L (20 mg/mL)

非イオン性界面活性剤  
Nonionic surfactants

1. Triton X-100

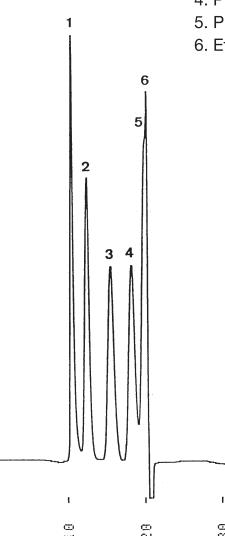


(G920109C)

Column : YMC-Pack Diol-120  
500  $\times$  8.0 mm I.D.  
Eluent : acetonitrile/water (10/90)  
Flow rate : 1.0 mL/min  
Temperature : ambient (23 °C)  
Detection : UV at 260 nm, 0.02 AUFS  
Injection : 15  $\mu$ L (5.0 mg/mL)  
Sample : Triton X-100

ポリエチレングリコール  
Polyethyleneglycols

1. PEG #20,000 (MW 20,000)  
2. PEG #6,000 (MW 8,400)  
3. PEG #4,000 (MW 3,350)  
4. PEG #1,000 (MW 1,000)  
5. PEG #300 (MW 300)  
6. Ethyleneglycol (MW 62)



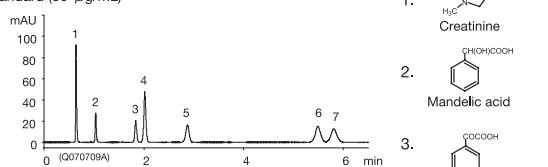
(G920123A)

Column : YMC-Pack Diol-120  
500  $\times$  8.0 mm I.D.  
Eluent : acetonitrile/water (10/90)  
Flow rate : 1.0 mL/min  
Temperature : ambient (22 °C)  
Detection : RI,  $64 \times 10^{-6}$  RIU/FS  
Injection : 100  $\mu$ L (1.67 mg/mL)

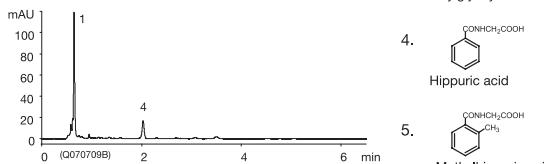
### 尿中の有機溶剤代謝物

#### Metabolites of organic solvents in human urine

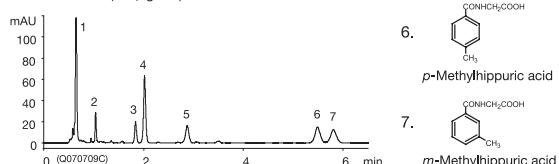
A) Standard (50 µg/mL)



B) Blank urine (diluted 10 times with water)



C) Spiked blank urine (50 µg/mL)

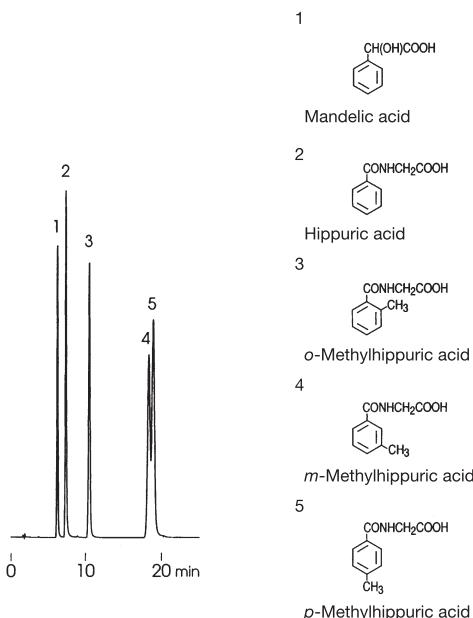


(Q070709C)

Column : YMC-UltraHT HydroSphere C18 (2 µm, 12 nm)  
100 × 2.0 mm I.D.  
Eluent : 20 mM CH<sub>3</sub>COONH<sub>4</sub>/2-propanol (97/3)  
Flow rate : 0.4 mL/min  
Temperature : 35 °C  
Detection : UV at 225 nm  
Injection : 1 µL

### 馬尿酸類

#### Hippuric and methylhippuric acids

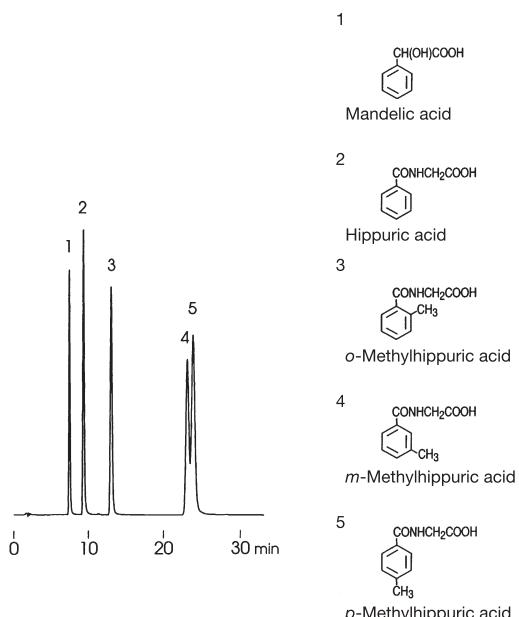


(A961114A)

Column : YMC-Pack Pro C18 (5 µm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 3.2)/methanol (80/20)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 225 nm, 0.16 AUFS  
Injection : 10 µL (0.04 ~ 0.07 mg/mL)

### 馬尿酸類

#### Hippuric and methylhippuric acids

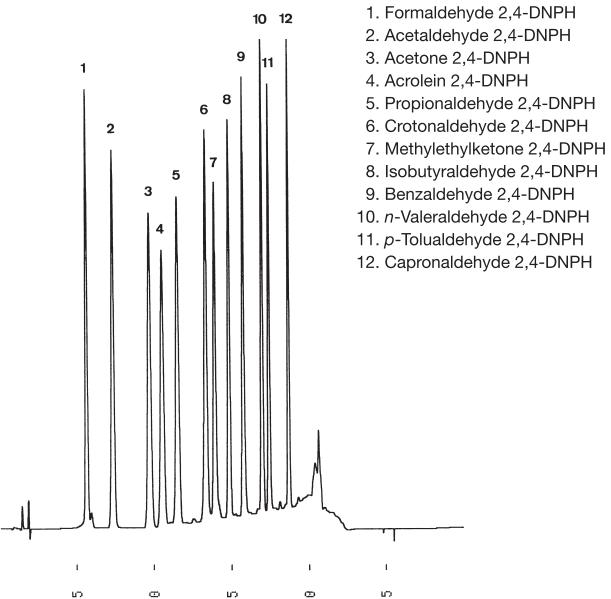


(A961119A)

Column : J'sphere ODS-M80 (4 µm, 8 nm)  
150 × 4.6 mm I.D.  
Eluent : 20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-H<sub>3</sub>PO<sub>4</sub> (pH 3.2)/methanol (80/20)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 225 nm, 0.16 AUFS  
Injection : 10 µL (0.04 ~ 0.07 mg/mL)

### アルデヒドおよびケトン類の2,4-DNPH誘導体

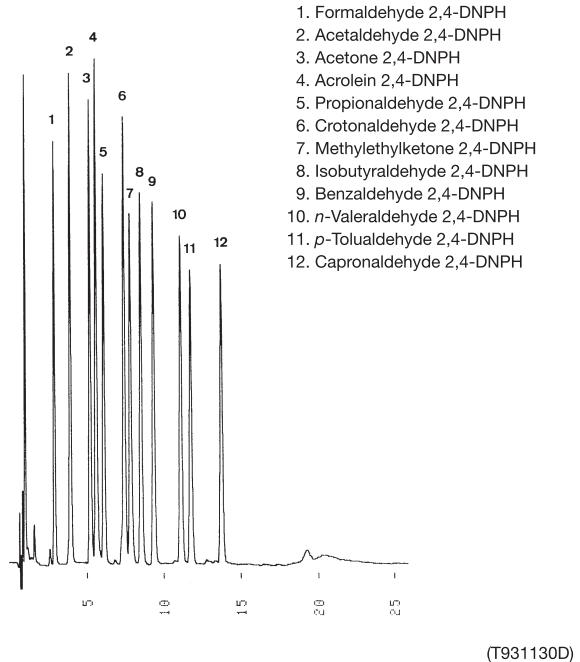
#### 2,4-Dinitrophenylhyrazones of aldehydes and ketones



(T920302A)

Column : YMC-Pack C<sub>4</sub> (5 µm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : A) tetrahydrofuran/water (10/90)  
B) acetonitrile  
35%B (0-7 min), 35-65%B (7-18 min, linear), 100%B (18-19 min),  
35%B (19-35 min)  
Flow rate : 1.5 mL/min  
Temperature : 30 °C  
Detection : UV at 360 nm, 0.01 AUFS  
Injection : 11 µL (0.0025 mg/mL)

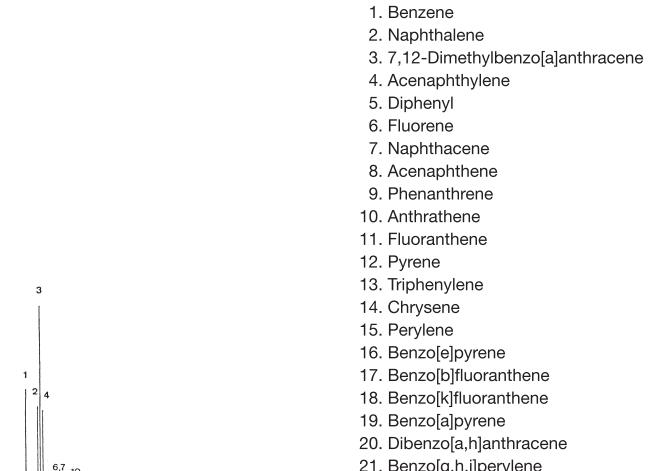
アルデヒドおよびケトン類の 2,4-DNPH 誘導体  
2,4-dinitrophenylhydrazones of aldehydes and ketones



1. Formaldehyde 2,4-DNPH
2. Acetaldehyde 2,4-DNPH
3. Acetone 2,4-DNPH
4. Acrolein 2,4-DNPH
5. Propionaldehyde 2,4-DNPH
6. Crotonaldehyde 2,4-DNPH
7. Methyl ethyl ketone 2,4-DNPH
8. Isobutyraldehyde 2,4-DNPH
9. Benzaldehyde 2,4-DNPH
10. *n*-Valeraldehyde 2,4-DNPH
11. *p*-Tolualdehyde 2,4-DNPH
12. Capronaldehyde 2,4-DNPH

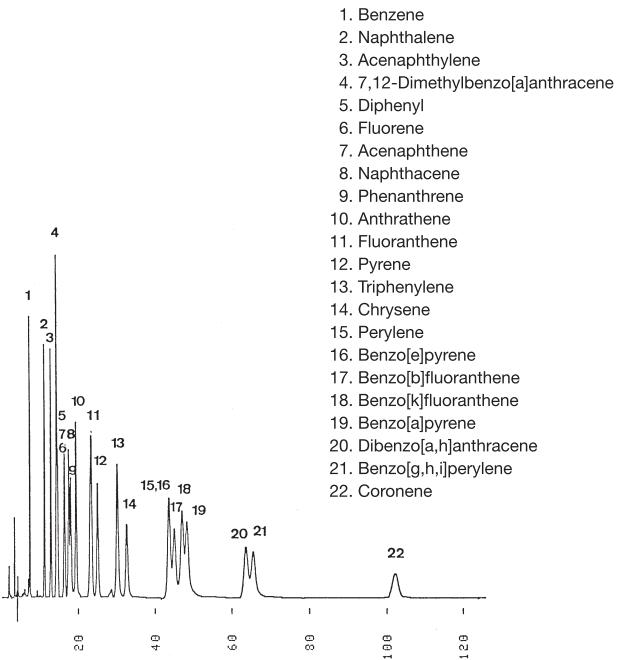
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : A) tetrahydrofuran/water (20/80)  
B) acetonitrile/methanol (90/10)  
30-67% B (0-15 min, linear), 30% B (15-25 min)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 360 nm, 0.01 AUFS  
Injection : 15  $\mu$ L (0.001 mg/mL)

多環芳香族炭化水素  
Polyaromatic hydrocarbons



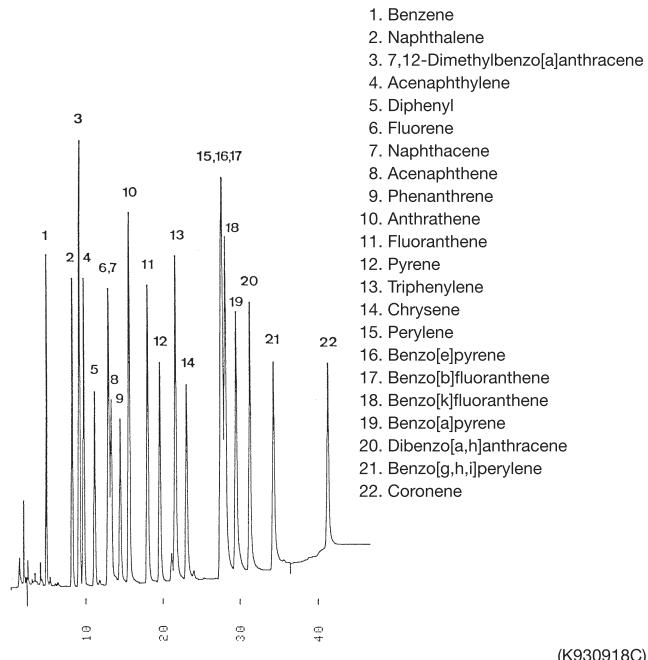
1. Benzene
2. Naphthalene
3. 7,12-Dimethylbenzo[a]anthracene
4. Acenaphthylene
5. Diphenyl
6. Fluorene
7. Naphthacene
8. Acenaphthene
9. Phenanthrene
10. Anthrathene
11. Fluoranthene
12. Pyrene
13. Triphenylene
14. Chrysene
15. Perylene
16. Benzo[e]pyrene
17. Benzo[b]fluoranthene
18. Benzo[k]fluoranthene
19. Benzo[a]pyrene
20. Dibenz[a,h]anthracene
21. Benzo[g,h,i]perylene
22. Coronene

多環芳香族炭化水素  
Polyaromatic hydrocarbons



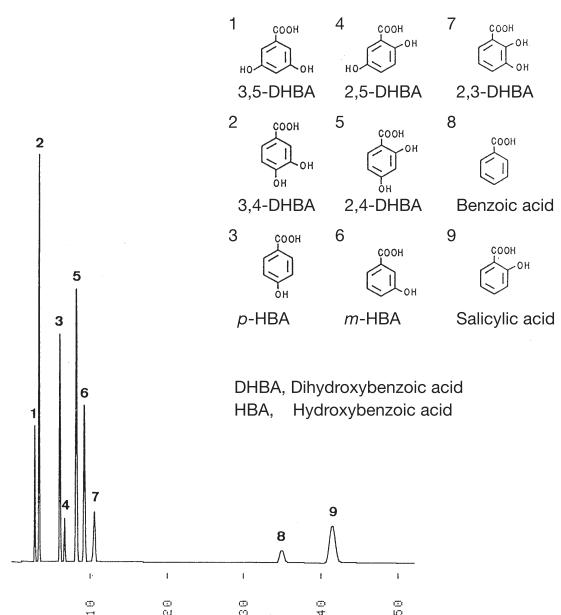
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (65/35)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.08 AUFS  
Injection : 7  $\mu$ L

多環芳香族炭化水素  
Polyaromatic hydrocarbons



Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : A) acetonitrile/water (50/50)  
B) acetonitrile  
30% B (0-5 min), 30-100% B (5-40 min), 100% B (40-50 min)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.08 AUFS  
Injection : 7  $\mu$ L

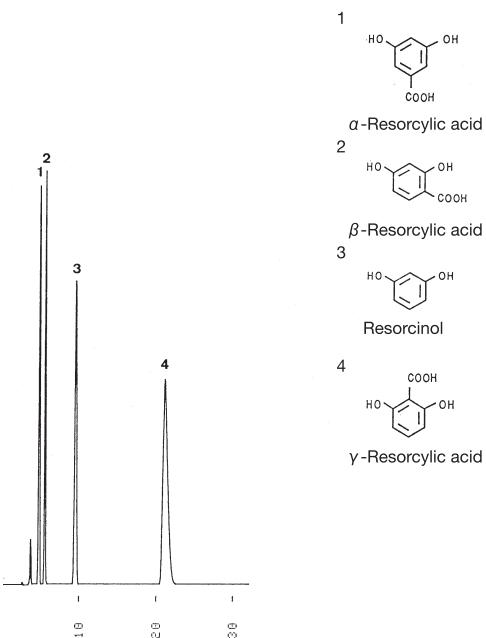
ヒドロキシ安息香酸  
Hydroxybenzoic acids



(O940530D)

Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (5/90/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 285 nm, 0.16 AUFS  
Injection : 5  $\mu$ L (0.1 mg/mL)

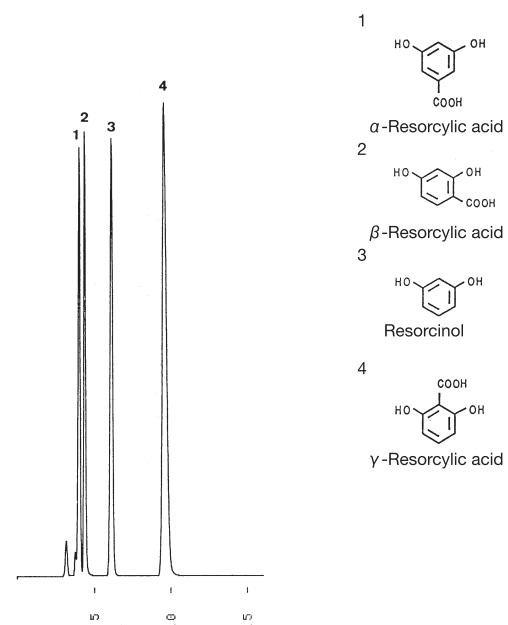
レゾルシン酸異性体  
Resorcylic acid isomers



(O940607C)

Column : YMC-Pack C<sub>8</sub> (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/100 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 285 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.4 mg/mL)

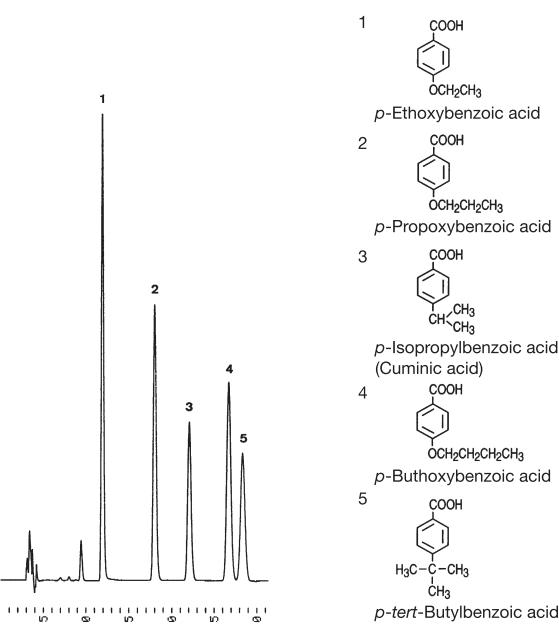
レゾルシン酸異性体  
Resorcylic acid isomers



(O940606J)

Column : YMC-Pack Ph (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/100 mM KH<sub>2</sub>PO<sub>4</sub> (10/90)  
Flow rate : 0.8 mL/min  
Temperature : 37 °C  
Detection : UV at 285 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.4 mg/mL)

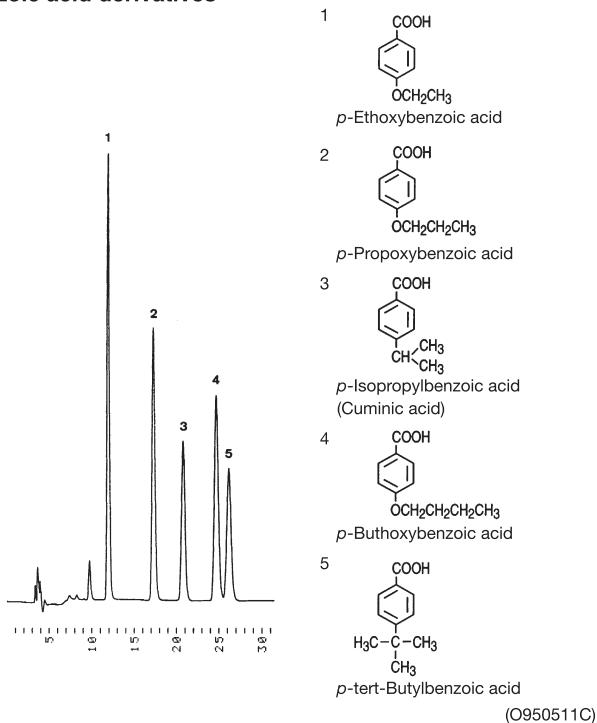
安息香酸誘導体  
Benzoin acid derivatives



(O950511B)

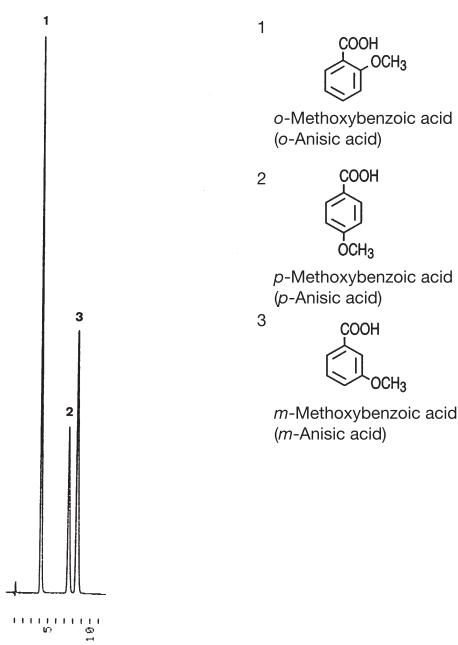
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : tetrahydrofuran/water/acetic acid (40/60/1)  
Flow rate : 0.5 mL/min  
Temperature : ambient (26 °C)  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.04 ~ 0.2 mg/mL)

安息香酸誘導体  
Benzoic acid derivatives



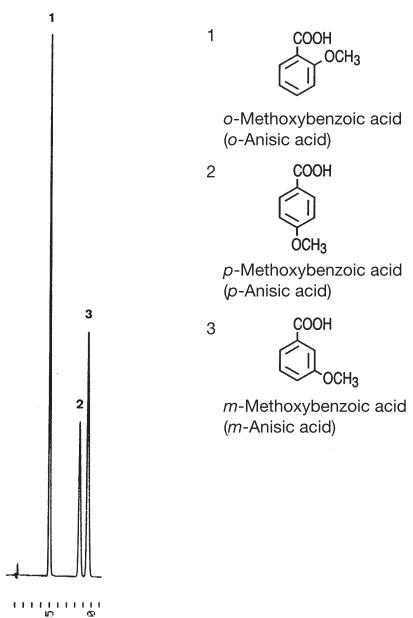
Column : J'sphere ODS-L80 (4  $\mu\text{m}$ , 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : tetrahydrofuran/water/acetic acid (40/60/1)  
Flow rate : 0.5 mL/min  
Temperature : ambient (26 °C)  
Detection : UV at 260 nm, 0.32 AUFS  
Injection : 10  $\mu\text{L}$  (0.04 ~ 0.2 mg/mL)

メトキシ安息香酸異性体  
Methoxybenzoic acid isomers



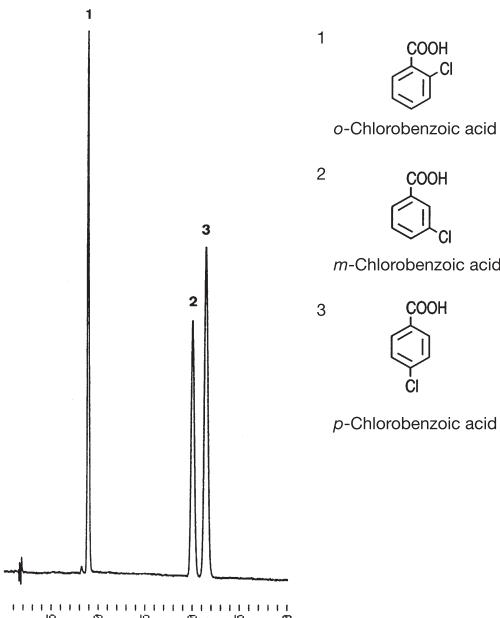
Column : J'sphere ODS-H80 (4  $\mu\text{m}$ , 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (20/80/1)  
Flow rate : 1.0 mL/min  
Temperature : ambient (25 °C)  
Detection : UV at 285 nm, 0.16 AUFS  
Injection : 10  $\mu\text{L}$  (0.17 mg/mL)

メトキシ安息香酸異性体  
Methoxybenzoic acid isomers



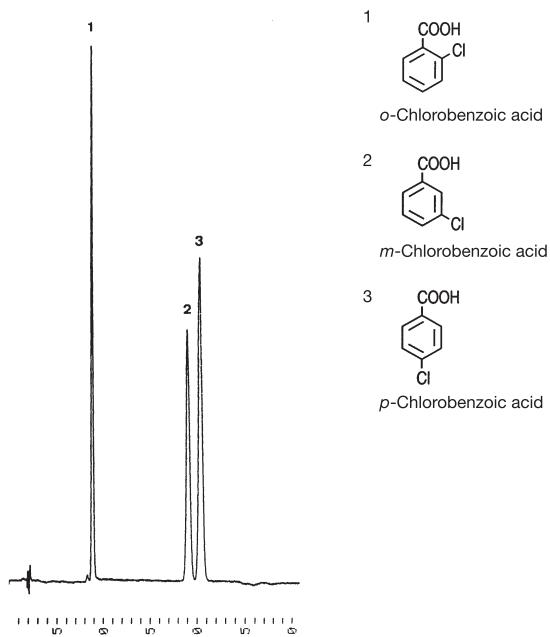
Column : J'sphere ODS-M80 (4  $\mu\text{m}$ , 8 nm)  
75  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (20/80/1)  
Flow rate : 1.0 mL/min  
Temperature : ambient (25 °C)  
Detection : UV at 285 nm, 0.16 AUFS  
Injection : 10  $\mu\text{L}$  (0.17 mg/mL)

クロロ安息香酸異性体  
Chlorobenzoic acid isomers



Column : J'sphere ODS-H80 (4  $\mu\text{m}$ , 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (25/75/1)  
Flow rate : 1.0 mL/min  
Temperature : ambient (27 °C)  
Detection : UV at 270 nm, 0.04 AUFS  
Injection : 10  $\mu\text{L}$  (0.17 mg/mL)

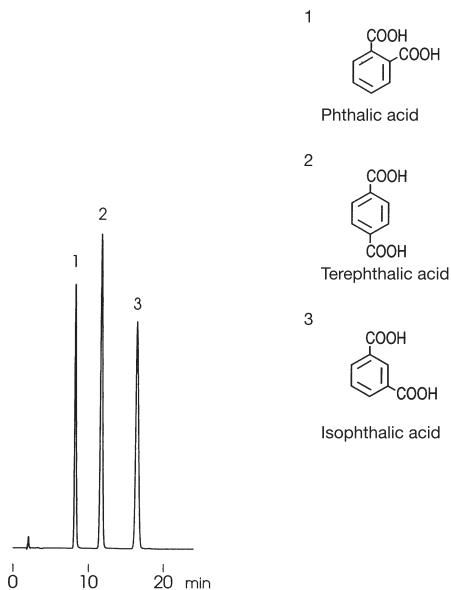
クロロ安息香酸異性体  
Chlorobenzoic acid isomers



(O950509D)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (25/75/1)  
Flow rate : 1.0 mL/min  
Temperature : ambient (27 °C)  
Detection : UV at 270 nm, 0.04 AUFS  
Injection : 10  $\mu$ L (0.17 mg/mL)

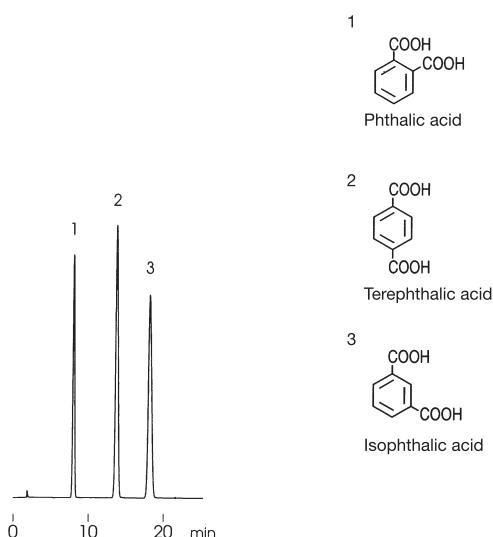
フタル酸異性体  
Phthalic acid isomers



(A971112B)

Column : YMC-Pack Pro C18 (5  $\mu$ m, 12 nm)  
150  $\times$  3.0 mm I.D.  
Eluent : methanol/10 mM H<sub>3</sub>PO<sub>4</sub> (25/75)  
Flow rate : 0.4 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 4  $\mu$ L (0.05 ~ 0.5 mg/mL)

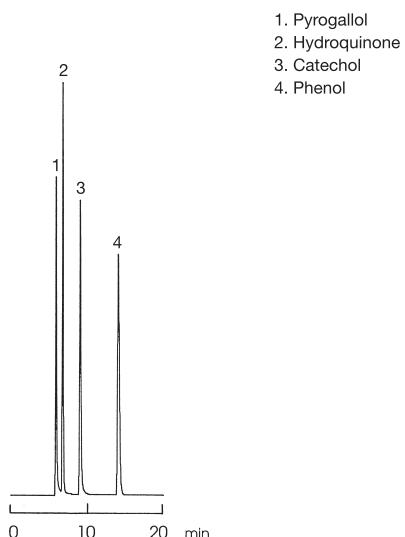
フタル酸異性体  
Phthalic acid isomers



(A971112A)

Column : YMC-Pack ODS-AQ (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/10 mM H<sub>3</sub>PO<sub>4</sub> (25/75)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.05 ~ 0.5 mg/mL)

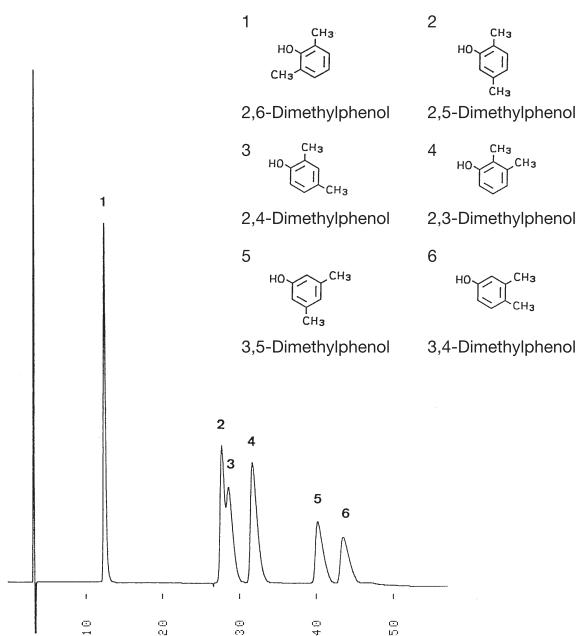
ポリフェノール  
Polyphenols



(H890627A)

Column : YMC-Pack Ph (5  $\mu$ m, 12 nm)  
250  $\times$  4.6 mm I.D.  
Eluent : 5 mM acetic acid  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 280 nm, 0.32 AUFS  
Injection : 20  $\mu$ L

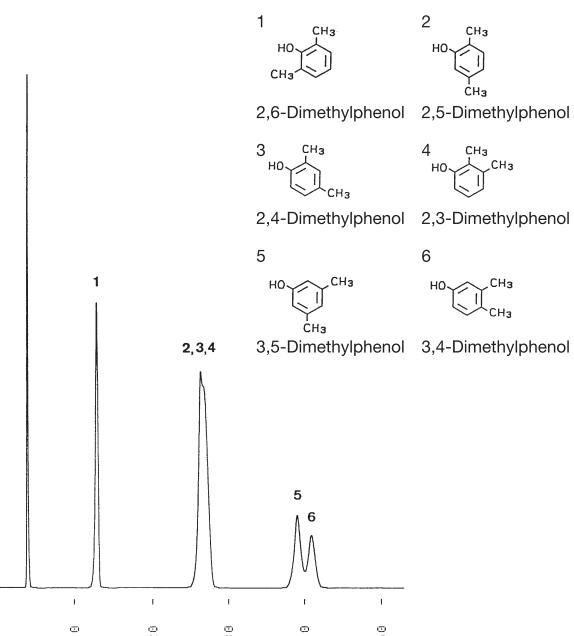
ジメチルフェノール異性体  
Dimethylphenol isomers



(T921019B)

Column : YMC-Pack Polyamine II  
250 × 4.6 mm I.D.  
Eluent : 20% ethyl acetate in hexane  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm, 0.08 AUFS  
Injection : 20 μL (0.33 mg/mL)

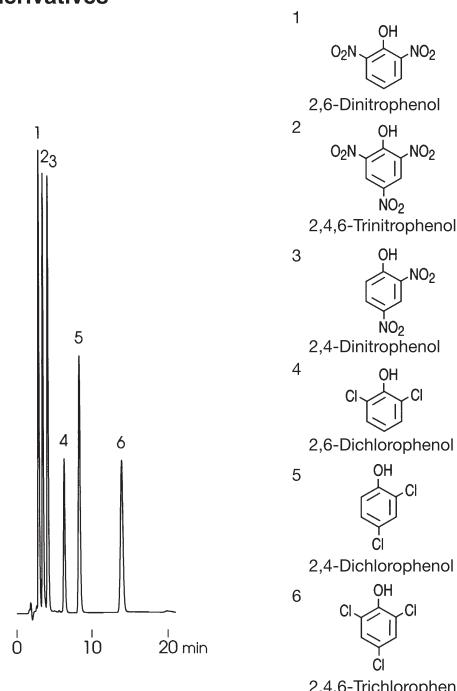
ジメチルフェノール異性体  
Dimethylphenol isomers



(T921020C)

Column : YMC-Pack NH<sub>2</sub> (5 μm, 12 nm)  
250 × 4.6 mm I.D.  
Eluent : 10% ethyl acetate in hexane  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm, 0.08 AUFS  
Injection : 20 μL (0.33 mg/mL)

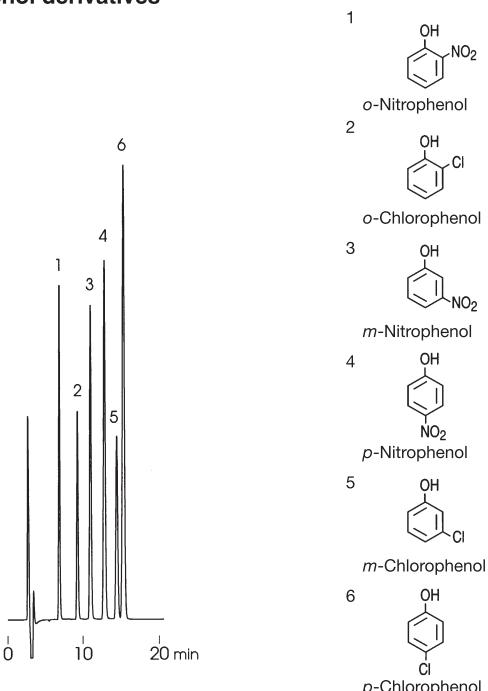
フェノール誘導体  
Phenol derivatives



(O950616)

Column : J'sphere ODS-H80 (4 μm, 8 nm)  
75 × 4.6 mm I.D.  
Eluent : 2-propanol/water/TFA (40/60/0.1)  
Flow rate : 0.4 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.13 AUFS  
Injection : 5 μL (0.04 mg/mL)

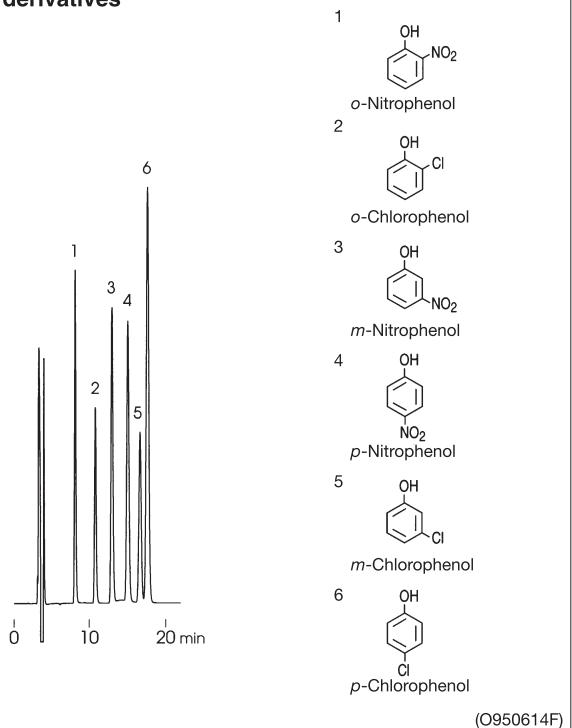
フェノール誘導体  
Phenol derivatives



(O950614C)

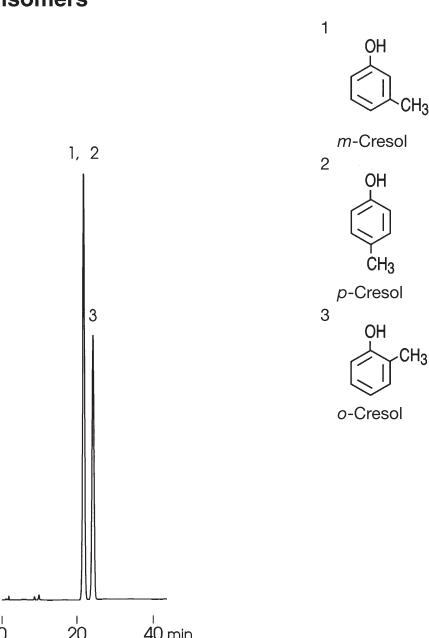
Column : J'sphere ODS-H80 (4 μm, 8 nm)  
150 × 4.6 mm I.D.  
Eluent : tetrahydrofuran/water/acetic acid (35/65/1)  
Flow rate : 0.5 mL/min  
Temperature : 37 °C  
Detection : UV at 240 nm, 0.13 AUFS  
Injection : 4 μL (0.08 mg/mL)

フェノール誘導体  
Phenol derivatives



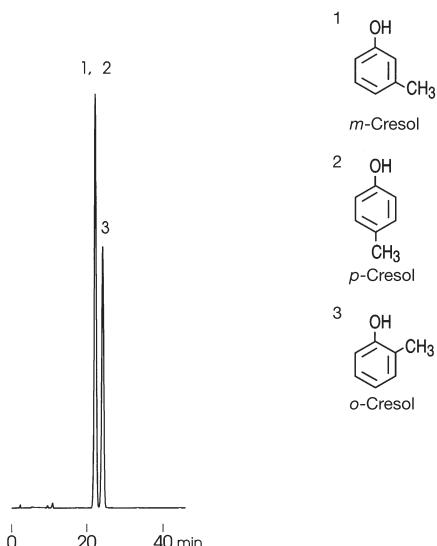
Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : tetrahydrofuran/water/acetic acid (35/65/1)  
Flow rate : 0.5 mL/min  
Temperature : 37 °C  
Detection : UV at 240 nm, 0.13 AUFS  
Injection : 4  $\mu$ L (0.08 mg/mL)

クレゾール異性体  
Cresol isomers



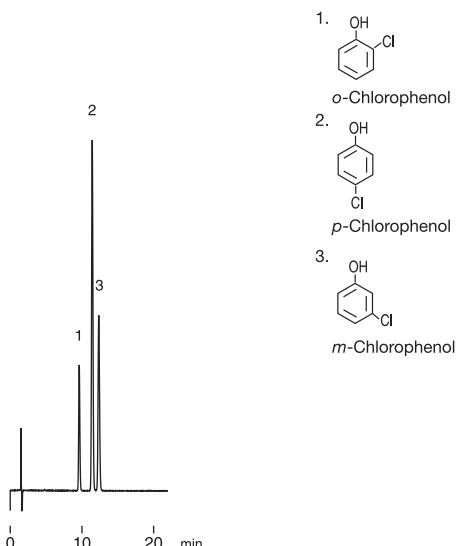
Column : J'sphere ODS-H80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (18/82)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.064 AUFS  
Injection : 10  $\mu$ L (0.3 mg/mL)

クレゾール異性体  
Cresol isomers



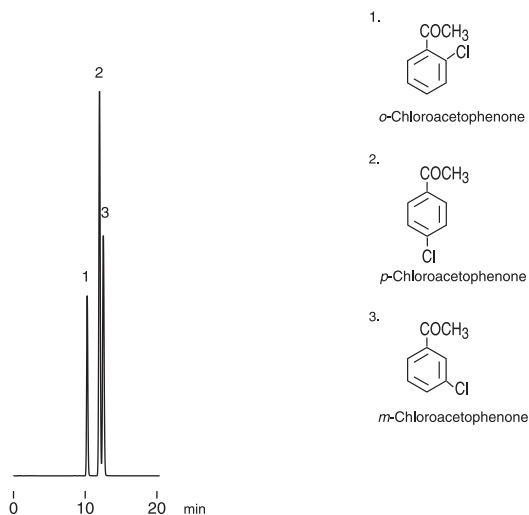
Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (18/82)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 260 nm, 0.064 AUFS  
Injection : 10  $\mu$ L (0.3 mg/mL)

クロロフェノール異性体  
Chlorophenol isomers



Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water/acetic acid (30/70/1)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 230 nm, 0.32 AUFS  
Injection : 10  $\mu$ L (0.1 ~ 0.2 mg/mL)

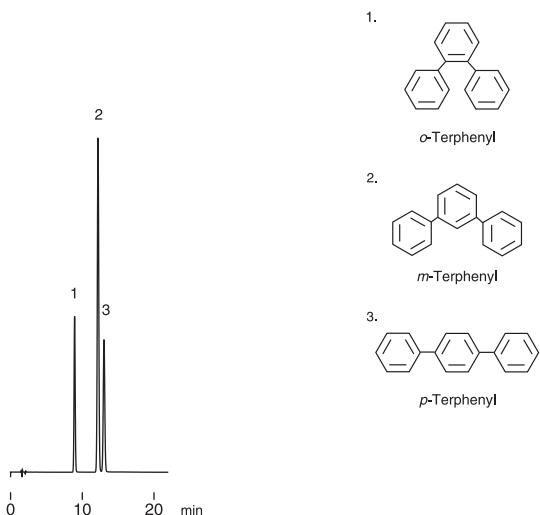
クロロアセトフェノン異性体  
Chloroacetophenone isomers



(J011026B)

Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : acetonitrile/water (40/60)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm, 0.32 AUFS  
Injection : 8.0  $\mu$ L (0.05 ~ 0.1  $\mu$ L/mL)

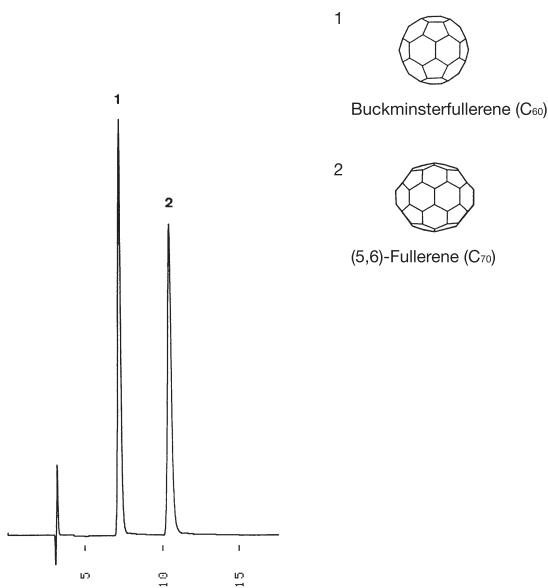
ターフェニル異性体  
Terphenyl isomers



(J020719E)

Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : methanol/water (85/15)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.02 mg/mL)

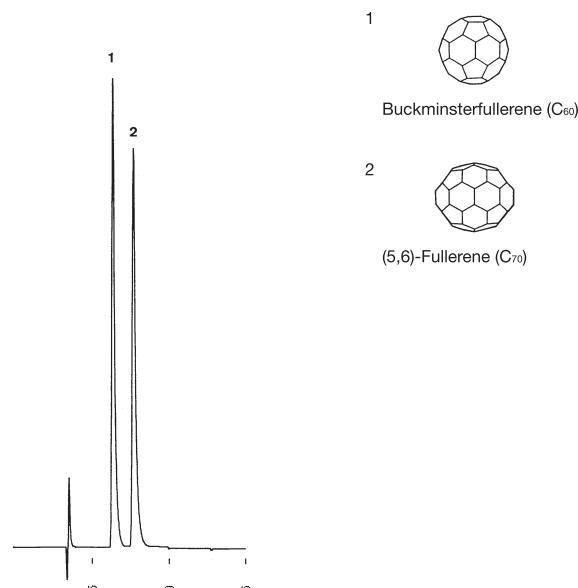
フラーレン同族体  
Fullerenes



(S930119B)

Column : YMC-Pack ODS-A (5  $\mu$ m, 12 nm)  
150  $\times$  6.0 mm I.D.  
Eluent : hexane/2-propanol (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient (25 °C)  
Detection : UV at 350 nm, 0.08 AUFS  
Injection : 4  $\mu$ L (0.125 mg/mL)

フラーレン同族体  
Fullerenes

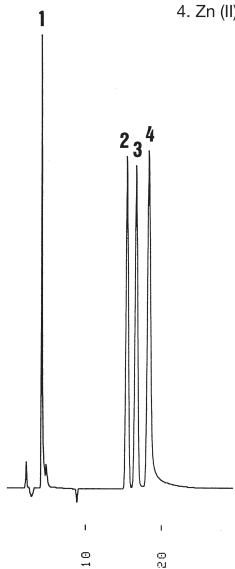


(S930128B)

Column : YMC-Pack Ph (5  $\mu$ m, 12 nm)  
150  $\times$  6.0 mm I.D.  
Eluent : hexane/2-propanol (50/50)  
Flow rate : 1.0 mL/min  
Temperature : ambient (25 °C)  
Detection : UV at 350 nm, 0.08 AUFS  
Injection : 4  $\mu$ L (0.125 mg/mL)

1-(2-ピリジルアゾ)-2-ナフトール(PAN)金属キレート  
Metal-PAN chelates

1. Co (II)-1-(2-Pyridylazo)-2-naphthol
2. Ni (II)-1-(2-Pyridylazo)-2-naphthol
3. Fe (III)-1-(2-Pyridylazo)-2-naphthol
4. Zn (II)-1-(2-Pyridylazo)-2-naphthol

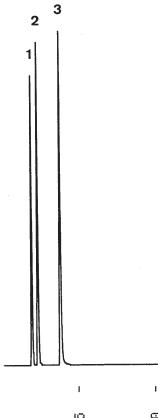


(T910520A)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  6.0 mm I.D.  
Eluent : acetonitrile/water (70/30) containing 0.01% PAN  
and 10 mM tetrabutylammonium bromide  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : VIS at 565 nm, 0.08 AUFS  
Injection : 12  $\mu$ L (25 ~ 92  $\mu$ g/mL)

配位性化合物  
Coordination compounds

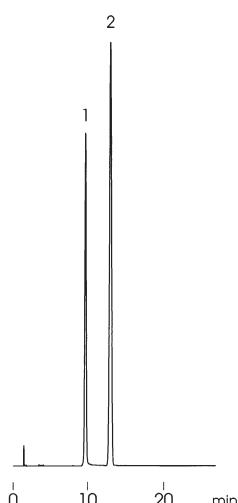
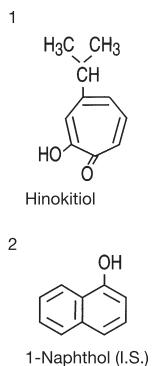
1. Uracil
2. Acetylacetone
3. 8-Quinolinol



(M910604)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 7.6)/methanol (40/60)  
Flow rate : 1.0 mL/min  
Temperature : 40 °C  
Detection : UV at 254 nm, 0.32 AUFS

ヒノキチオール  
Hinokitiol

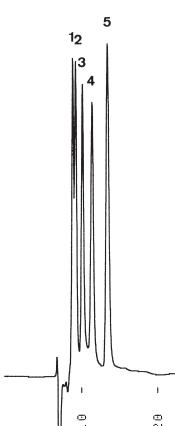


(O960507F)

Column : YMC-Pack ODS-AM (5  $\mu$ m, 12 nm)  
150  $\times$  4.6 mm I.D.  
Eluent : 20 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub> containing 1 mM EDTA · 2Na/acetonitrile (65/35)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 320 nm, 0.16 AUFS  
Injection : 10  $\mu$ L (0.08, 0.25 mg/mL)

アミノアルコール  
Aminoalcohols

1. Ethanolamine
2. Diethanolamine
3. N-Methylethanolamine
4. Triethanolamine
5. N,N-Dimethylethanolamine

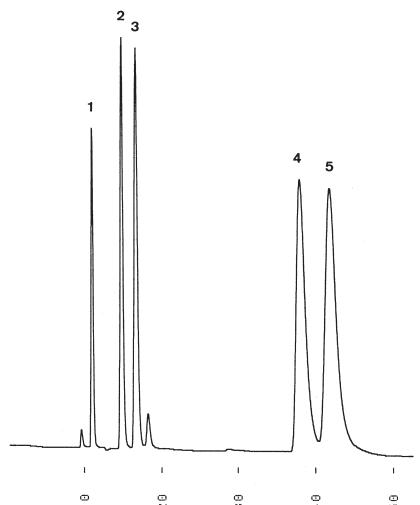


(M920124B)

Column : YMC-Pack PolymerC18  
250  $\times$  6.0 mm I.D.  
Eluent : 100 mM Na<sub>2</sub>HPO<sub>4</sub>/100 mM NaOH (60/40, pH 12.0)  
Flow rate : 0.6 mL/min  
Temperature : 20 °C  
Detection : UV at 215 nm, 0.32 AUFS  
Injection : 50  $\mu$ L (0.2 ~ 3.0 mg/mL)

尿素および関連化合物  
Urea and related compounds

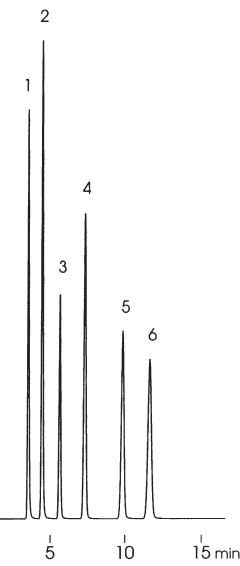
1. Urea
2. Propionamide
3. Ethylurea
4. 1,3-Diethylurea
5. 1,1-Diethylurea



(M920108A)

Column : YMC-Pack PolymerC18  
250 × 6.0 mm I.D.  
Eluent : 0.4% HClO<sub>4</sub> (pH 1.3)  
Flow rate : 0.5 mL/min  
Temperature : 25 °C  
Detection : UV at 210 nm, 0.32 AUFS  
Injection : 15 μL (0.4 ~ 7.5 mg/mL)

芳香族アミン  
Aromatic amines

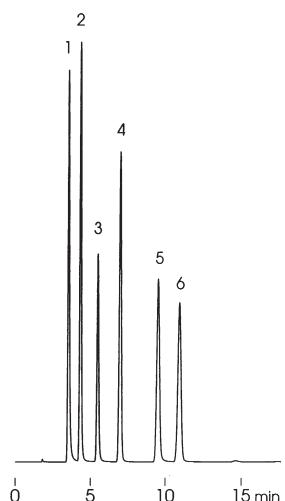


(S961007C)

Column : YMC-Pack Pro C18 (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-(NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (pH 6.7)/methanol (95/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.26 AUFS  
Injection : 5 μL (0.125 ~ 0.5 mg/mL)

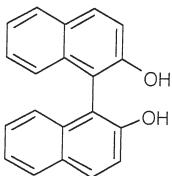
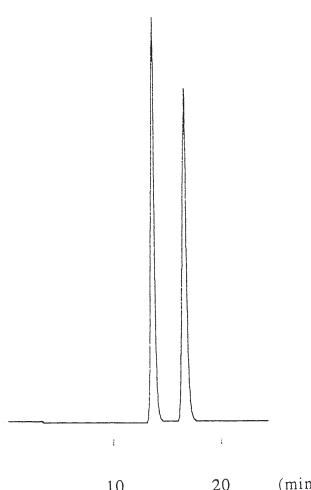
芳香族アミン  
Aromatic amines

1. Nc1ccc(N)cc1  
*p*-Phenylenediamine
2. Oc1ccc(N)cc1  
*p*-Aminophenol
3. Nc1ccc(N)cc1  
*m*-Phenylenediamine
4. Oc1ccc(N)cc1  
*m*-Aminophenol
5. Nc1ccc(N)cc1  
*o*-Phenylenediamine
6. Oc1ccc(N)cc1  
*o*-Aminophenol



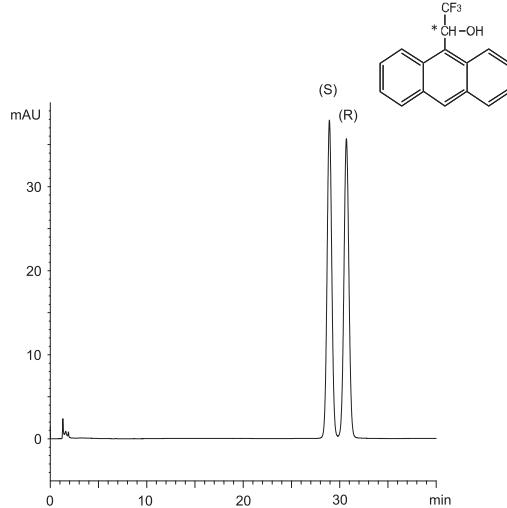
(S961004E)

Column : YMC-Pack ODS-AM (5 μm, 12 nm)  
150 × 4.6 mm I.D.  
Eluent : 50 mM NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>-(NH<sub>4</sub>)<sub>2</sub>HPO<sub>4</sub> (pH 6.7)/methanol (95/5)  
Flow rate : 1.0 mL/min  
Temperature : 37 °C  
Detection : UV at 254 nm, 0.26 AUFS  
Injection : 5 μL (0.125 ~ 0.5 mg/mL)

ビナフトール  
1,1'-Bi-2-naphthol

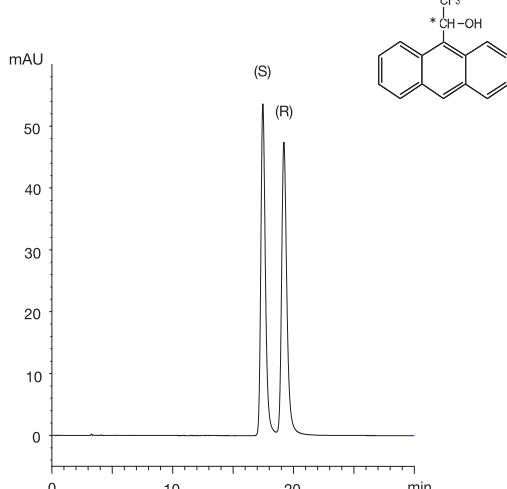
(N020605A)

Column : YMC CHIRAL NEA (R)  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (50/50)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : UV at 235 nm  
Injection : 1  $\mu$ L (2.8 mg/mL)

トリフルオロアンスリルエタノール  
2,2,2-Trifluoro-1-(9-anthryl)ethanol

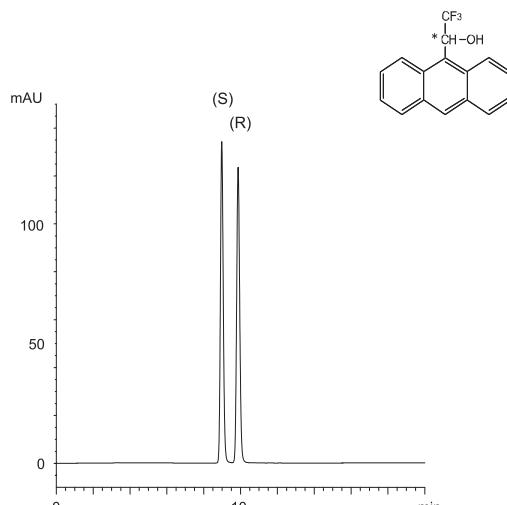
(N050823B)

Column : YMC CHIRAL NEA (R)  
250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (40/60)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : UV at 254 nm  
Injection : 10  $\mu$ L (0.01 mg/mL)

トリフルオロアンスリルエタノール  
2,2,2-Trifluoro-1-(9-anthryl)ethanol

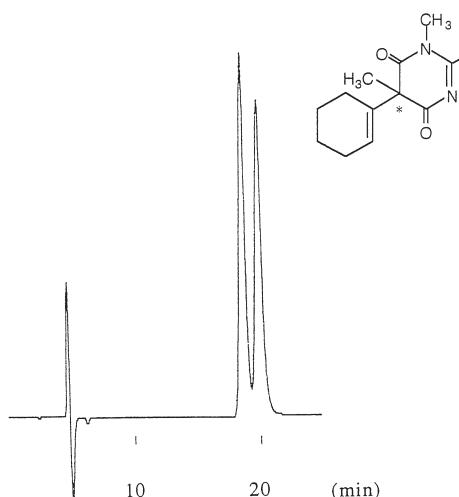
(N050823A)

Column : YMC CHIRAL NEA (R)  
250 × 4.6 mm I.D.  
Eluent : n-hexane/ethanol (98/2)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm  
Injection : 10  $\mu$ L (0.01 mg/mL)

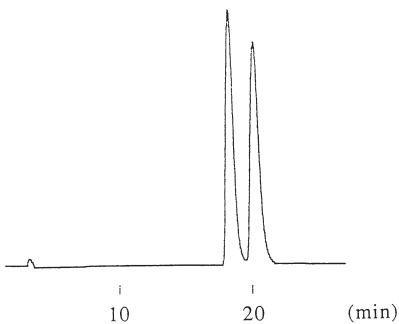
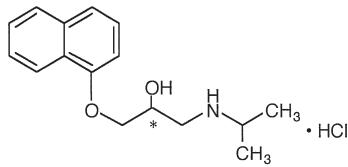
トリフルオロアンスリルエタノール  
2,2,2-Trifluoro-1-(9-anthryl)ethanol

(N050819C)

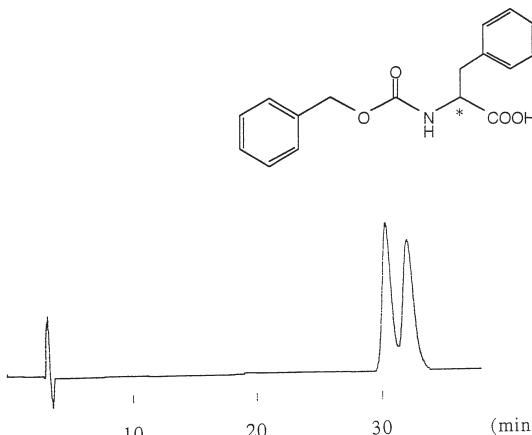
Column : YMC CHIRAL NEA (R)  
250 × 4.6 mm I.D.  
Eluent : n-hexane/dichloromethane/ethanol (70/30/1)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm  
Injection : 10  $\mu$ L (0.01 mg/mL)

ヘキソバルビタール  
Hexobarbital

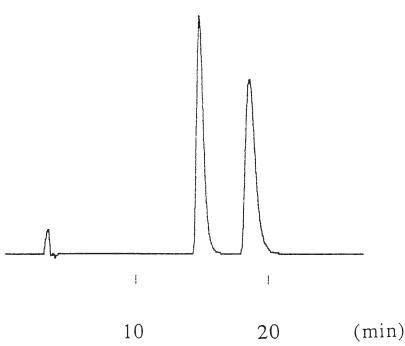
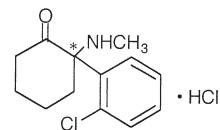
Column : YMC CHIRAL NEA (R)  
          250 × 4.6 mm I.D.  
Eluent : acetonitrile/water (30/70)  
Flow rate : 0.7 mL/min  
Temperature : ambient  
Detection : UV at 210 nm  
Injection : 1  $\mu$ L (1.2 mg/mL)

塩酸プロプラノロール  
Propranolol hydrochloride

Column : YMC CHIRAL NEA (R)  
          250 × 4.6 mm I.D.  
Eluent : acetonitrile/0.5 M NaClO<sub>4</sub> (40/60)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : UV at 254 nm  
Injection : 5  $\mu$ L (1.5 mg/mL)

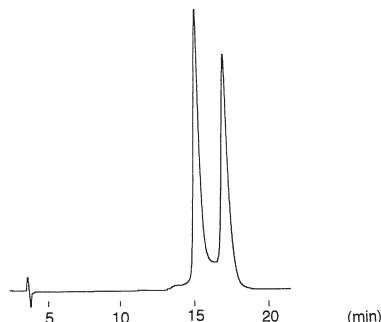
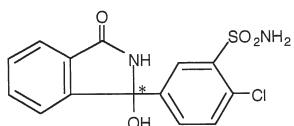
CBZ-フェニルアラニン  
CBZ-Phenylalanine (Z-Phe-OH)

Column : YMC CHIRAL NEA (R)  
          250 × 4.6 mm I.D.  
Eluent : 0.5 M NaClO<sub>4</sub>-HClO<sub>4</sub> (pH 2.0)/acetonitrile (70/30)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : UV at 254 nm  
Injection : 10  $\mu$ L (1.5 mg/mL)

塩酸ケタミン  
Ketamine hydrochloride

Column : YMC CHIRAL NEA (R)  
          250 × 4.6 mm I.D.  
Eluent : acetonitrile/0.5 M NaClO<sub>4</sub> (40/60)  
Flow rate : 1.0 mL/min  
Temperature : ambient  
Detection : UV at 268 nm  
Injection : 10  $\mu$ L (1.4 mg/mL)

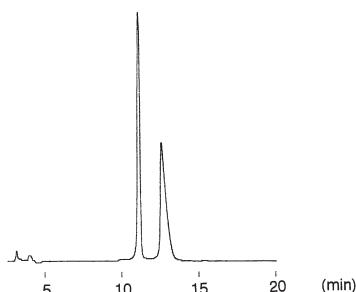
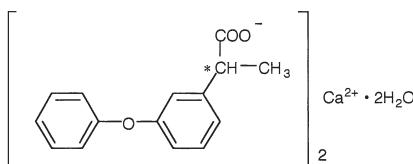
**クロルタリドン**  
Chlorthalidone



(N020605G)

Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : water/acetic acid (100/1)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 2  $\mu$ L (1 mg/mL)

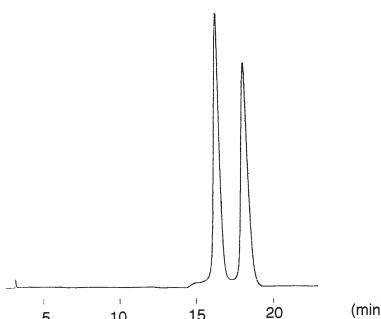
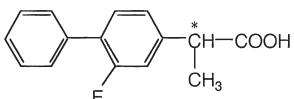
**フェノプロフェンカルシウム**  
Fenoprofen calcium salt; hydrate



(N020605H)

Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : 0.53 M AcOH-0.53 M TEA (pH 4.0)/acetonitrile (10/90)  
(TEA=triethylamine)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 5  $\mu$ L (1 mg/mL)

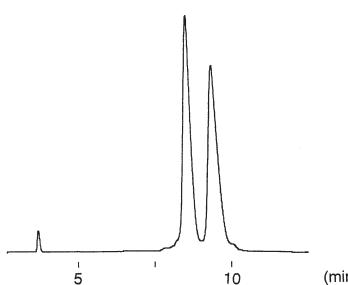
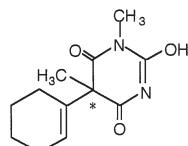
**フルレビプロフェン**  
Flurbiprofen



(N020605I)

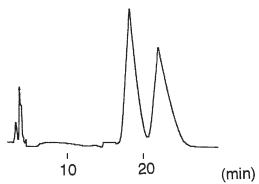
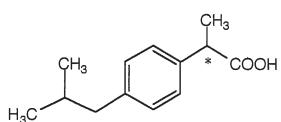
Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : 0.53 M AcOH-0.53 M TEA (pH 4.0)/acetonitrile (10/90)  
(TEA=triethylamine)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 2  $\mu$ L (1 mg/mL)

**ヘキソバルビタール**  
Hexobarbital



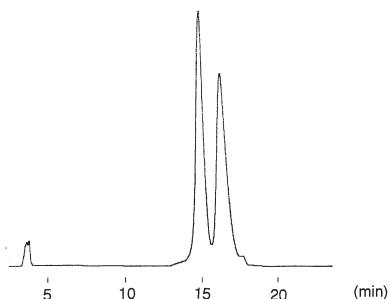
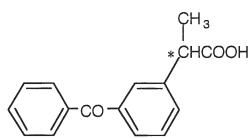
(N020605J)

Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : 0.2 M AcOH-0.2 M TEA (pH 5.6)/methanol (70/30)  
(TEA=triethylamine)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : UV at 254 nm  
Injection : 5  $\mu$ L (1 mg/mL)

イブプロフェン  
Ibuprofen

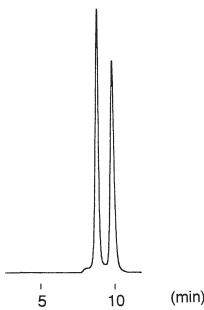
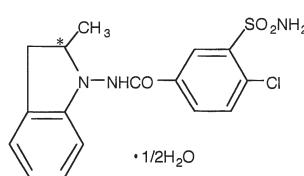
(N020605K)

Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : 0.1 M AcOHaq-TEAaq (pH 4.0)/acetonitrile (10/90)  
(TEA=triethylamine)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 20  $\mu$ L (2 mg/mL)

ケトプロフェン  
Ketoprofen

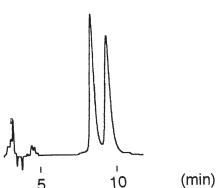
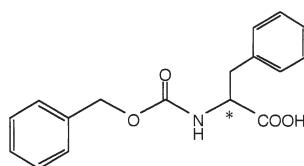
(N020605M)

Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : 0.2 M AcOH-0.2 M TEA (pH 5.6)/methanol (30/70)  
(TEA=triethylamine)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 10  $\mu$ L (1 mg/mL)

インダパミド  
Indapamide

(N020605L)

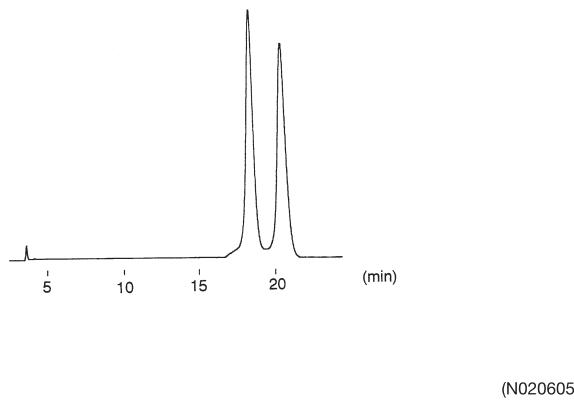
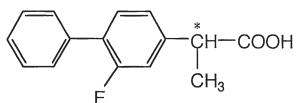
Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : 0.2 M AcOH-0.2 M TEA (pH 5.6)/acetonitrile (90/10)  
(TEA=triethylamine)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 2  $\mu$ L (1 mg/mL)

CBZ-フェニルアラニン  
CBZ-Phenylalanine (Z-Phe-OH)

(N020605N)

Column : YMC CHIRAL  $\beta$ -CD BR  
250 × 4.6 mm I.D.  
Eluent : 0.53 M AcOH-0.53 M TEA (pH 4.0)/acetonitrile (40/60)  
(TEA=triethylamine)  
Flow rate : 1.0 mL/min  
Temperature : 25 °C  
Detection : UV at 254 nm  
Injection : 5  $\mu$ L (1 mg/mL)

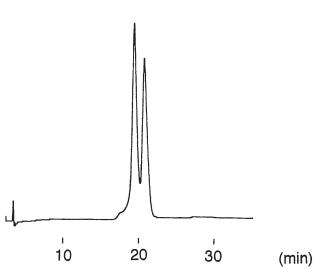
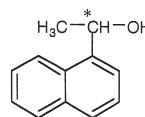
フルルビプロフェン  
Flurbiprofen



(N020605O)

Column	: YMC CHIRAL $\gamma$ -CD BR 250 × 4.6 mm I.D.
Eluent	: 0.53 M AcOH-0.53 M TEA (pH 4.0)/methanol (30/70) (TEA=triethylamine)
Flow rate	: 1.0 mL/min
Temperature	: 25 °C
Detection	: UV at 254 nm
Injection	: 2 $\mu$ L (1 mg/mL)

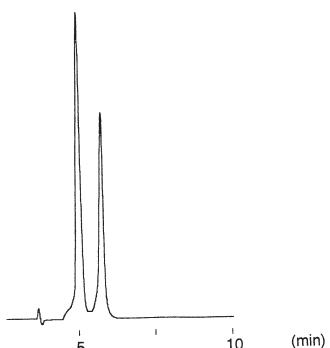
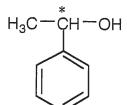
ナフチルエチルアルコール  
1-(1-Naphthyl)-ethylalcohol



(N020605P)

Column	: YMC CHIRAL $\gamma$ -CD BR 250 × 4.6 mm I.D.
Eluent	: 0.2 M AcOH-0.2 M TEA (pH 5.6)/methanol (90/10) (TEA=triethylamine)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm
Injection	: 5 $\mu$ L (1 mg/mL)

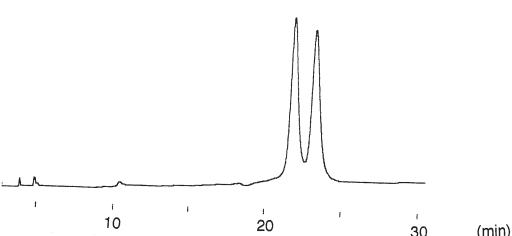
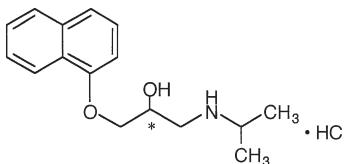
フェニルエチルアルコール  
Phenylethylalcohol



(N020605Q)

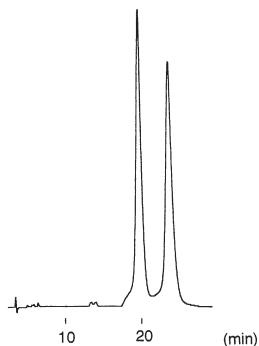
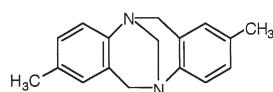
Column	: YMC CHIRAL $\gamma$ -CD BR 250 × 4.6 mm I.D.
Eluent	: 0.53 M AcOH-0.53 M TEA (pH 4.0)/methanol (90/10) (TEA=triethylamine)
Flow rate	: 1.0 mL/min
Temperature	: 30 °C
Detection	: UV at 254 nm
Injection	: 5 $\mu$ L (10 mg/mL)

塩酸プロプラノロール  
Propranolol hydrochloride



(N020605R)

Column	: YMC CHIRAL $\gamma$ -CD BR 250 × 4.6 mm I.D.
Eluent	: acetonitrile/methanol/acetic acid/triethylamine (99/1/0.3/0.25)
Flow rate	: 1.0 mL/min
Temperature	: 25 °C
Detection	: UV at 254 nm
Injection	: 5 $\mu$ L (1 mg/mL)

トレーガー塩基  
Troger's base

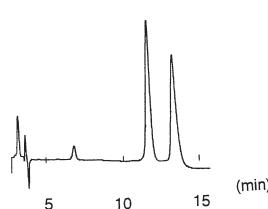
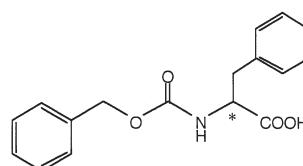
(N020605S)

Column : YMC CHIRAL  $\gamma$ -CD BR  
250 × 4.6 mm I.D.Eluent : 0.2 M AcOH-0.2 M TEA (pH 5.6)/acetonitrile (90/10)  
(TEA=triethylamine)

Flow rate : 1.0 mL/min

Temperature : 30 °C

Detection : UV at 254 nm

Injection : 5  $\mu$ L (1 mg/mL)CBZ-フェニルアラニン  
CBZ-Phenylalanine (Z-Phe-OH)

(N020605T)

Column : YMC CHIRAL  $\gamma$ -CD BR  
250 × 4.6 mm I.D.Eluent : 0.53 M AcOH-0.53 M TEA (pH 4.0)/acetonitrile (60/40)  
(TEA=triethylamine)

Flow rate : 1.0 mL/min

Temperature : 25 °C

Detection : UV at 254 nm

Injection : 5  $\mu$ L (1 mg/mL)

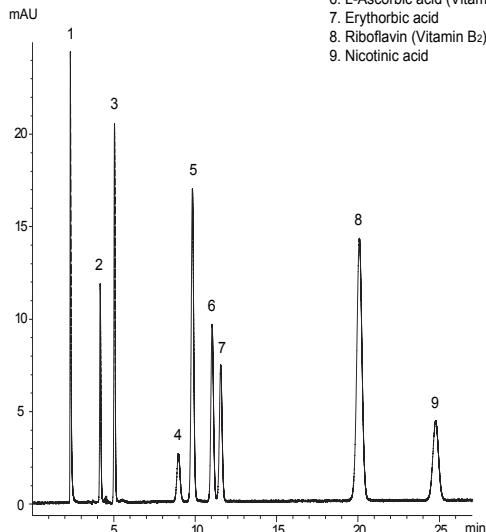
# Additional Data

## 水溶性ビタミン (食品中の食品添加物分析法準規)

Water-soluble vitamins

R100315D

1. Thiamine HCl (Vitamin B<sub>1</sub>)
2. Pyridoxine HCl (Vitamin B<sub>6</sub>)
3. Nicotinamide
4. Cyanocobalamin (Vitamin B<sub>12</sub>)
5. L-Ascorbic acid 2-glucoside
6. L-Ascorbic acid
7. Erythorbic acid
8. Riboflavin (Vitamin B<sub>2</sub>)
9. Nicotinic acid



Column : YMC-Triart C18 (5 μm, 12 nm)

Eluent : 250 X 4.6 mmI.D.

: phosphate buffer%acetonitrile (90/10)

※Dissolve 1.4 g KH<sub>2</sub>PO<sub>4</sub> in 800 mL water → add 26 mL 10% TBA·OH  
→ adjust pH 5.2 by 20% H<sub>3</sub>PO<sub>4</sub> → add water to make 1000 mL

Flow rate : 0.8 mL/min

Temperature : 40°C

Detection : UV at 260 nm

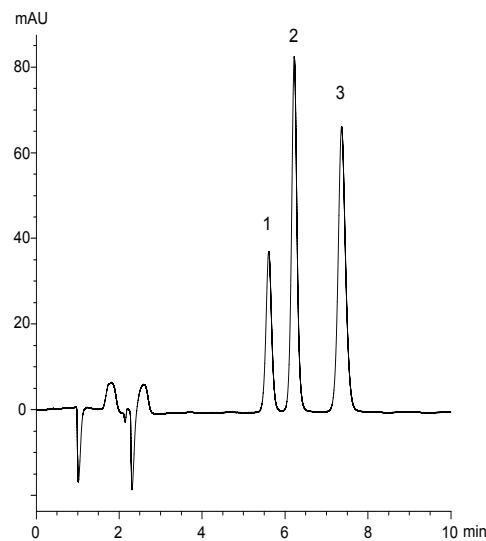
Injection : 10 μL (5 μg/mL)

## 水溶性ビタミン

Water-soluble vitamins

R100226S

1. Nicotinic acid
2. Erythorbic acid
3. L-Ascorbic acid



Column : YMC-Pack Diol-NP (5 μm, 12 nm)

Eluent : 150 X 2.0 mmI.D.

Flow rate : 0.2 mL/min

Temperature : 40°C

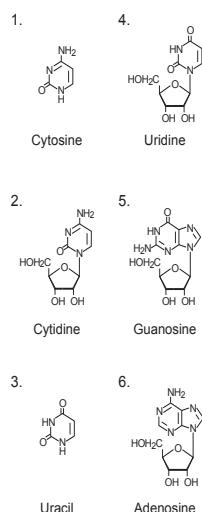
Detection : UV at 254 nm

Injection : 5 μL (0.02 mg/mL)

## 核酸塩基・ヌクレオシド

Nucleosides and bases

R090205G



mAU

40

30

20

10

0

0 5 10 15 min

Column : Hydrosphere C18 (5 μm, 12 nm)

150 X 4.6 mmI.D.

Eluent : 20 mM CH<sub>3</sub>COONH<sub>4</sub>-CH<sub>3</sub>COOH (pH 4.1)/methanol (90/10)

Flow rate : 1.0 mL/min

Temperature : 30°C

Detection : UV at 254 nm

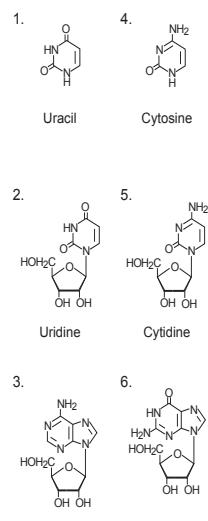
Injection : 5 μL

Sample : Cytosine (0.01 mg/mL), Cytidine (0.01 mg/mL), Uracil (0.005 mg/mL), Uridine (0.01 mg/mL), Guanosine (0.01 mg/mL), Adenosine (0.01 mg/mL)

## 核酸塩基・ヌクレオシド

Nucleosides and bases

R090116P



mAU

15

10

5

0

0 5 10 15 min

Column : YMC-Pack Diol-NP (5 μm, 12 nm)

150 X 2.0 mmI.D.

Eluent : water/acetonitrile (10/90) containing 10 mM CH<sub>3</sub>COONH<sub>4</sub>

Flow rate : 0.2 mL/min

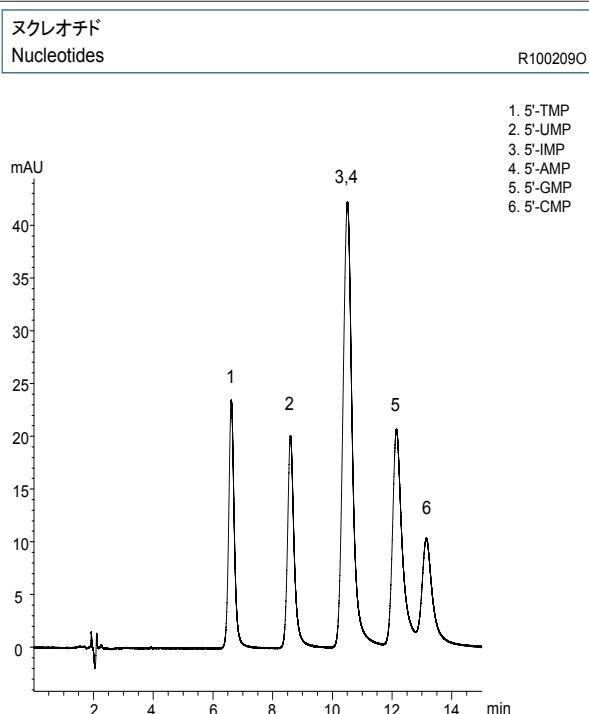
Temperature : 30°C

Detection : UV at 254 nm

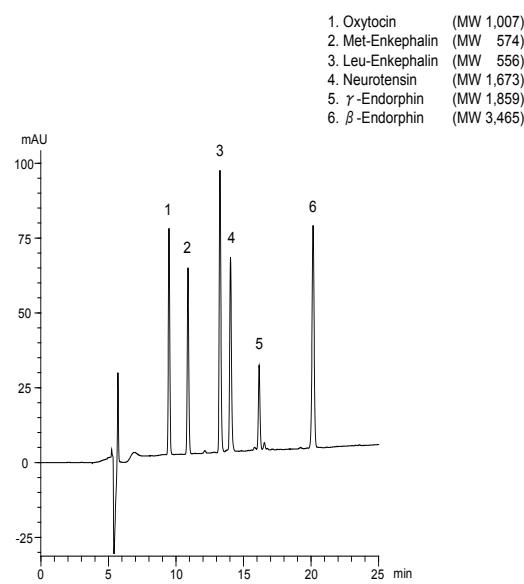
Injection : 1 μL

Sample : Uracil (0.005 mg/mL), Uridine (0.01 mg/mL), Adenosine (0.01 mg/mL), Cytosine (0.01 mg/mL), Cytidine (0.01 mg/mL), Guanosine (0.01 mg/mL)

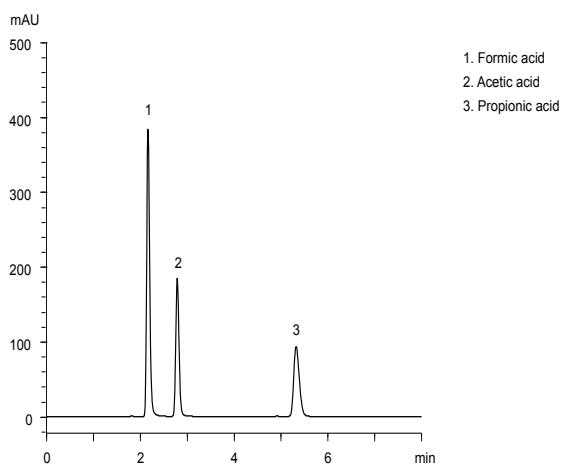
# Additional Data



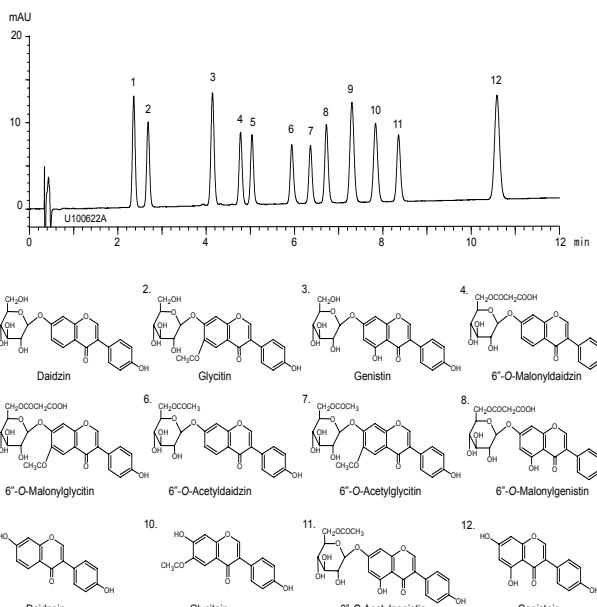
Column : YMC-Pack Diol-NP (5 μm, 12 nm)  
Eluent : 150 X 2.0 mm.D.  
Flow rate : 0.2 mL/min  
Temperature : 40°C  
Detection : UV at 254 nm  
Injection : 1 μL (0.1 mg/mL)



Column : YMC-Triart C18 (5 μm, 12 nm)  
Eluent : A) water/TFA (100/0.1)  
B) acetonitrile/TFA (100/0.1)  
20-45% B (0-25 min)  
Flow rate : 0.2 mL/min  
Temperature : 37°C  
Detection : UV at 220 nm  
Injection : 2 μL (0.075~0.25 mg/mL)



Column : YMC-Triart C18 (5 μm, 12 nm)  
Eluent : acetonitrile/0.1% H<sub>3</sub>PO<sub>4</sub> (5/95)  
Flow rate : 0.425 mL/min  
Temperature : 37°C  
Detection : UV at 210 nm  
Injection : 2 μL (5 μL/mL)

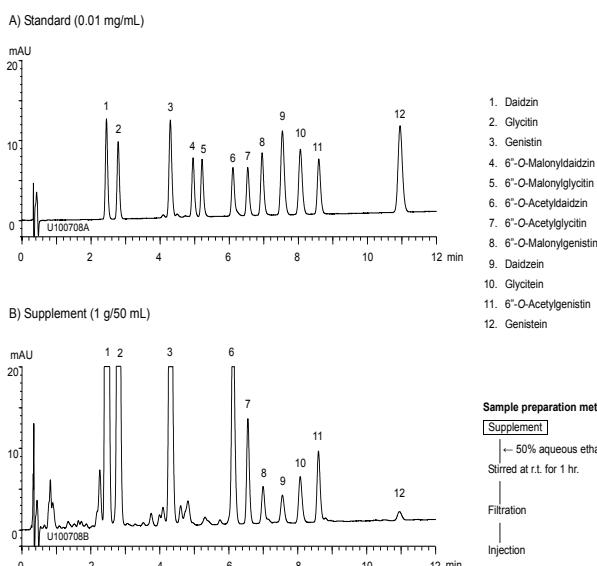


Column : YMC-Triart C18 (3 μm, 12 nm)  
50 X 2.0 mm.D.  
Eluent : A) acetonitrile/water/HCOOH (10/90/0.1)  
B) acetonitrile/water/HCOOH (60/40/0.1)  
5-40% B (0-12 min)  
Flow rate : 0.4 mL/min  
Temperature : 25°C  
Detection : UV at 254 nm  
Injection : 2 μL  
Sample : 0.01 mg/mL

# Additional Data

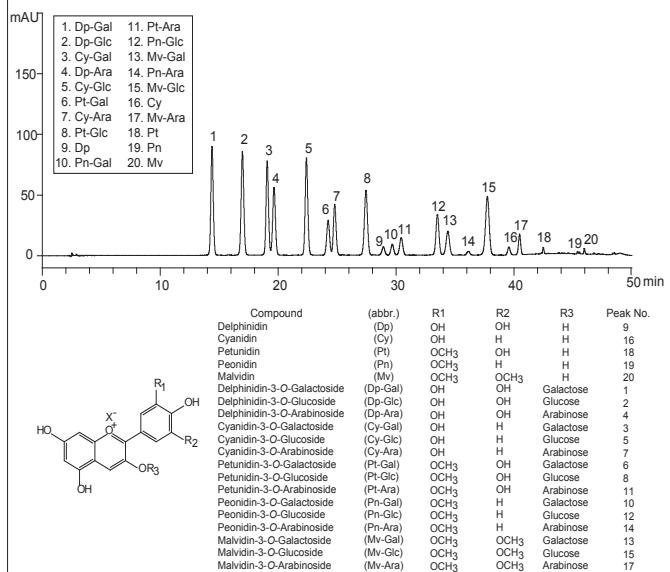
## サプリメント中の大豆イソフラボン Soy isoflavones in supplement

U100712B



Column : YMC-Triart C18 (3  $\mu$ m, 12 nm)  
50 X 2.0 mmI.D.  
Eluent : A) acetonitrile/water/HCOOH (10/90/0.1)  
B) acetonitrile/water/HCOOH (60/40/0.1)  
5-40%B (0-12 min)  
Flow rate : 0.4 mL/min  
Temperature : 25°C  
Detection : UV at 254 nm  
Injection : 2  $\mu$ L

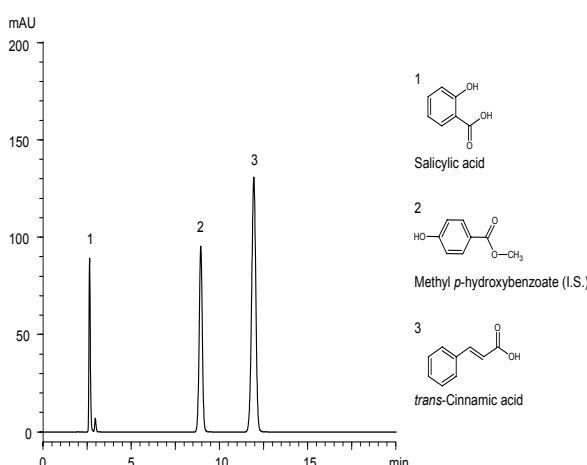
## ビルベリー中のアントシアニン (イタリア薬局方11改正条件) Anthocyanins in bilberry (The Italian Pharmacopoeia 11th Edition) Q090216A



Column : YMC-Pack Pro C18 RS (5  $\mu$ m, 8 nm)  
250 X 4.6 mmI.D.  
Eluent : A) water/HCOOH (90/10)  
B) acetonitrile/methanol/water/HCOOH (22.5/22.5/40/10)  
7-35%B (0-35 min), 35-65%B (35-45 min), 65-100%B (45-46 min),  
100%B (46-50 min)  
Flow rate : 1.0 mL/min  
Temperature : 30 °C  
Detection : VIS at 535 nm  
Injection : 10  $\mu$ L  
Sample : commercial bilberry powder (1.25 mg/mL)

## 芳香族カルボン酸 Aromatic carboxylic acids

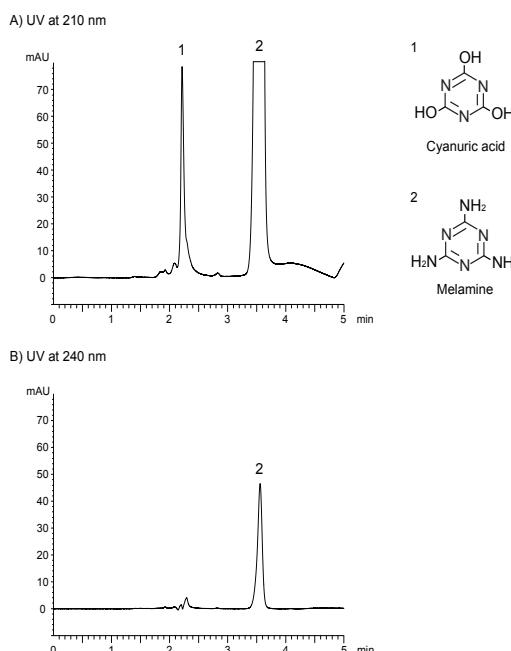
Q090805B



Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
150 X 3.0 mmI.D.  
Eluent : 10 mM CH<sub>3</sub>COOH-CH<sub>3</sub>COONH<sub>4</sub> (pH 4.2)/acetonitrile (75/25)  
Flow rate : 0.425 mL/min  
Temperature : 40°C  
Detection : UV at 254 nm  
Injection : 4  $\mu$ L (0.02 ~ 0.3 mg/mL)

## メラミンピシアヌル酸 - LC/MS対応条件 Melamine and Cyanuric acid - applicable to LC/MS analysis

R081023E

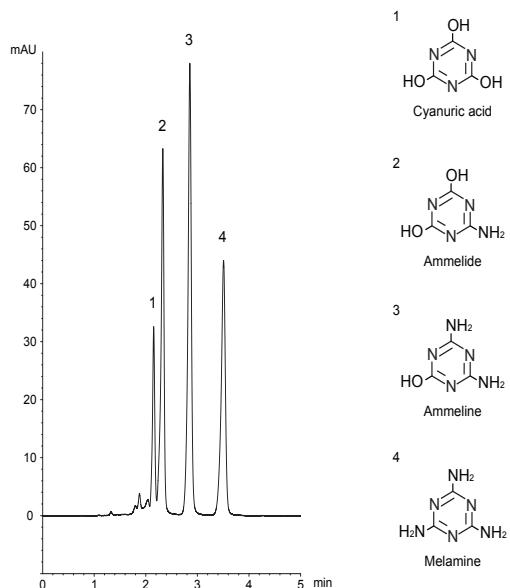


Column : YMC-Pack Diol-NP (5  $\mu$ m, 12 nm)  
150 X 3.0 mmI.D.  
Eluent : A) 10 mM CH<sub>3</sub>COONH<sub>4</sub>  
B) methanol  
95-50% B (0-5 min)  
Flow rate : 0.4 mL/min  
Temperature : 40°C  
Detection : A) UV at 210 nm, B) UV at 240 nm  
Injection : 1  $\mu$ L  
Sample : Cyanuric acid (0.5 mg/mL), Melamine (0.2 mg/mL)

# Additional Data

## メラミンおよび関連化合物 - LC/MS対応条件

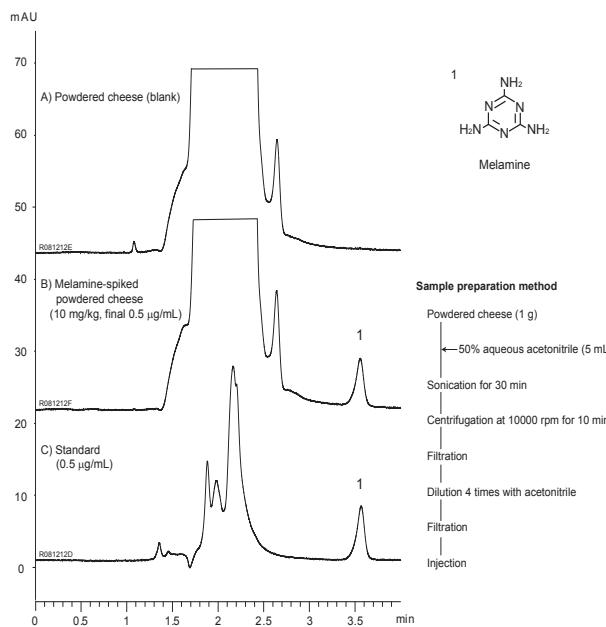
Melamine and related compounds - applicable to LC/MS analysis R081106I



Column	: YMC-Pack Diol-NP (5 $\mu$ m, 12 nm) 150 X 3.0 mmI.D.
Eluent	: A) 10 mM CH <sub>3</sub> COONH <sub>4</sub> B) methanol/acetonitrile (80/20) 95% B (isocratic)
Flow rate	: 0.4 mL/min
Temperature	: 40°C
Detection	: UV at 210 nm
Injection	: 1 $\mu$ L
Sample	: Cyanuric acid (0.25 mg/mL), Ammelide (0.05 mg/mL), Ammeline (0.025 mg/mL), Melamine (0.01 mg/mL)

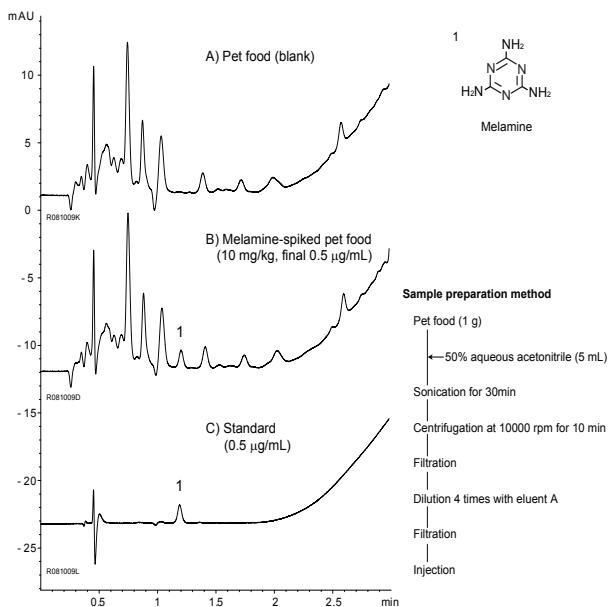
## 粉チーズ中のメラミン - LC/MS対応条件

Melamine in powdered cheese - applicable to LC/MS analysis R081212Z



## ペットフード中のメラミン - LC/MS対応条件

Melamine in pet food - applicable to LC/MS analysis R081015A

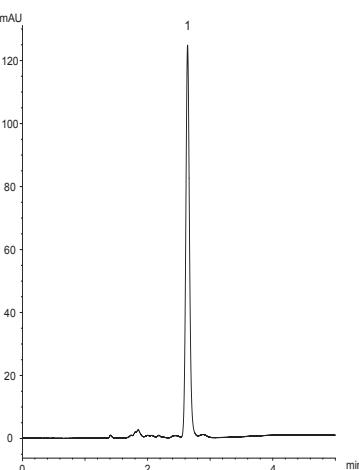


## アクリルアミド - LC/MS対応条件

Acrylamide R090203N

## アクリルアミド

Acrylamide



## アクリルアミド - LC/MS対応条件

Acrylamide R090203N

## アクリルアミド - LC/MS対応条件

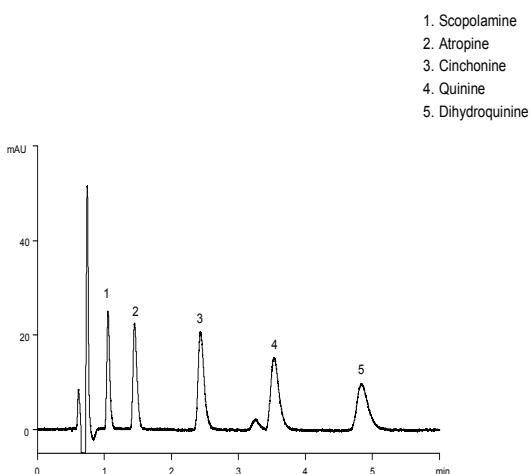
Acrylamide

Column	: YMC-Pack Diol-NP (5 $\mu$ m, 12 nm) 150 X 2.0 mmI.D.
Eluent	: 20 mM CH <sub>3</sub> COONH <sub>4</sub> /acetonitrile (5/95)
Flow rate	: 0.2 mL/min
Temperature	: 25°C
Detection	: UV at 210 nm
Injection	: 1 $\mu$ L (40 $\mu$ g/ml)

# Additional Data

## アルカロイド Alkaloids

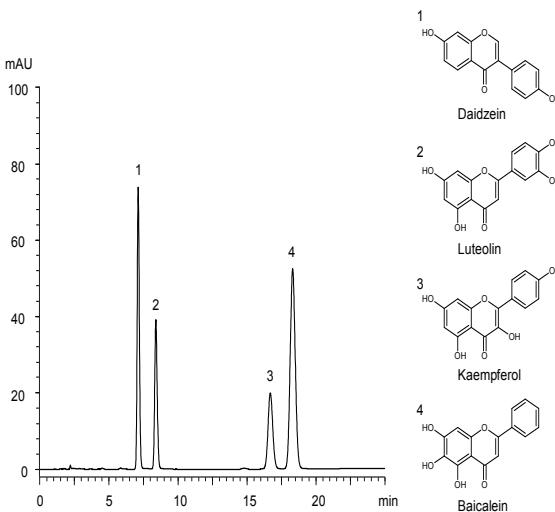
F090622C



Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
50 X 2.0 mmI.D.  
Eluent : 20 mM CH<sub>3</sub>COOH-CH<sub>3</sub>COONH<sub>4</sub> (pH 4.9)/acetonitrile (80/20)  
Flow rate : 0.2 mL/min  
Temperature : 40°C  
Detection : UV at 220 nm  
Injection : 1  $\mu$ L (0.02-0.1 mg/mL)

## フラボノイド Flavonoids

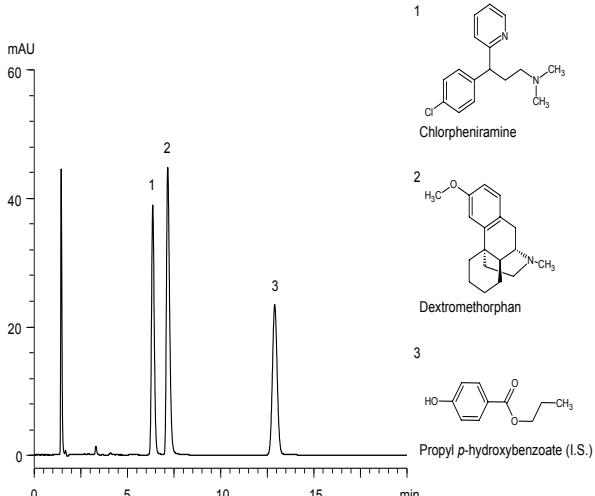
Q090925J



Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
150 X 3.0 mmI.D.  
Eluent : acetonitrile/10 mM H<sub>3</sub>PO<sub>4</sub> (30/70)  
Flow rate : 0.425 mL/min  
Temperature : 37°C  
Detection : UV at 280 nm  
Injection : 2  $\mu$ L (50  $\mu$ g/mL)

## 塩基性医薬品 Basic drugs

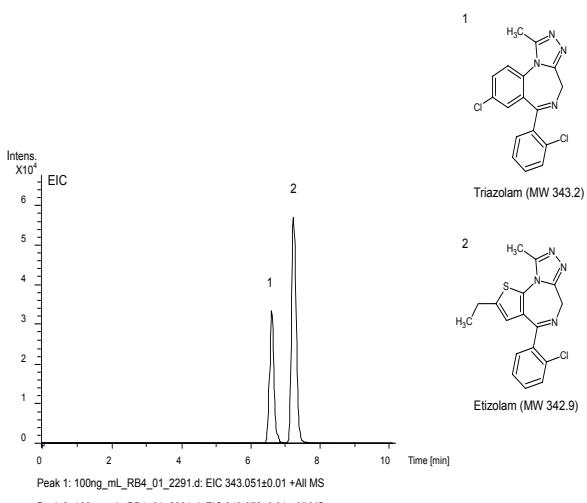
Q090928C



Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
150 X 3.0 mmI.D.  
Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub> (pH 6.9)/acetonitrile (65/35)  
Flow rate : 0.425 mL/min  
Temperature : 40°C  
Detection : UV at 235 nm  
Injection : 2  $\mu$ L (0.05 ~ 0.2 mg/mL)

## ベンゾジアゼピン系薬（トリアゾラム、エチゾラム）– LC/MS Benzodiazepine derivatives (Triazolam, Etizolam) – LC/MS

J100407A

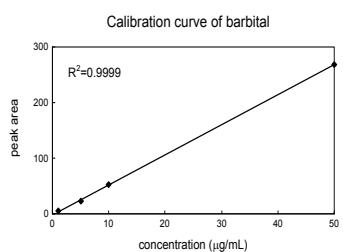
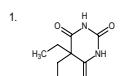
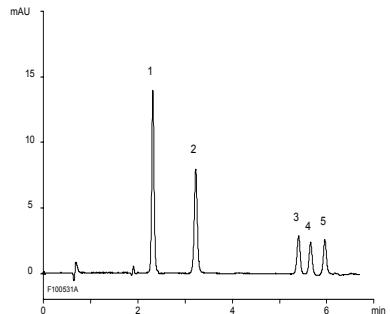


Courtesy of J. Watanabe, Bruker Daltonics K. K.

Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
50 X 2.0 mmI.D.  
Eluent : A) 10 mM formic acid  
B) acetonitrile  
25-50% B (0-10 min)  
Flow rate : 0.2 mL/min  
Temperature : 40°C  
Detection : Bruker Daltonics micrOTOF, ESI, positive mode  
Injection : 5  $\mu$ L (100 ng/mL)

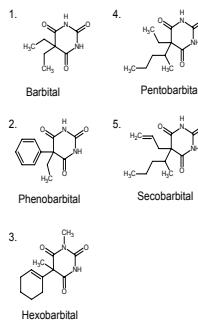
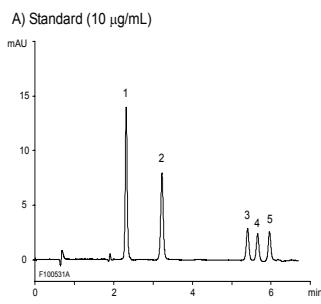
# Additional Data

## バルビツール酸系薬物 Barbiturates

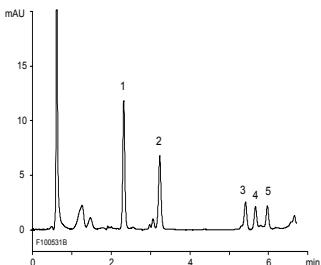


Column : YMC-Triart C18 (5  $\mu\text{m}$ , 12 nm)  
50 X 2.0 mmI.D.  
Eluent : A) 20 mM HCOONH<sub>4</sub>-NH<sub>3</sub> (pH 9.5)  
B) methanol  
0-90% B (0-7 min)  
Flow rate : 0.2 mL/min  
Temperature : 25°C  
Detection : UV at 240 nm  
Injection : 1  $\mu\text{L}$  (10  $\mu\text{g/mL}$ )

## 血清中のバルビツール酸系薬物 Barbiturates in human serum



### B) Spiked human serum



Solid-phase extraction method  
YMC Dispo SPE C18 100 mg/1 mL

```

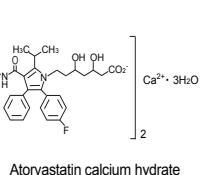
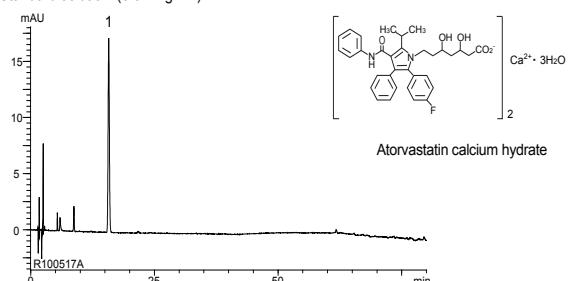
    Condition 2 mL methanol
    Load 500  $\mu\text{L}$  spiked human serum solution (each 10  $\mu\text{g}$ )
    Elute 500  $\mu\text{L}$  methanol/water (85/15)
    Dilute 500  $\mu\text{L}$  20mM ammonium formate buffer (pH 9.5)
  
```

Column : YMC-Triart C18 (5  $\mu\text{m}$ , 12 nm)  
50 X 2.0 mmI.D.  
Eluent : A) 20 mM HCOONH<sub>4</sub>-NH<sub>3</sub> (pH 9.5)  
B) methanol  
0-90% B (0-7 min)  
Flow rate : 0.2 mL/min  
Temperature : 25°C  
Detection : UV at 240 nm  
Injection : 1  $\mu\text{L}$

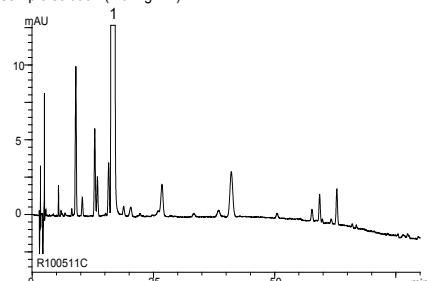
## アトルバスタチンカルシウム水和物 Atorvastatin calcium hydrate

R100421E

Standard solution (0.01 mg/mL)



Sample solution (1.0 mg/mL)



Column : YMC-Pack Pro C18 RS (5  $\mu\text{m}$ , 8 nm)

250 X 4.6 mmI.D.

Eluent : A) citric acid buffer\*/acetonitrile/THF (40/10/10)

B) acetonitrile/THF (1/1)

7% B (0-40 min), 7-40% B (40-80 min)

\*Dissolve 10.5 g citric acid monohydrate in 900 mL water

→ adjust pH 5.0 by 28% ammonia solution → add water to make 1000 mL

Flow rate : 1.3 mL/min

Temperature : 40°C

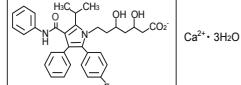
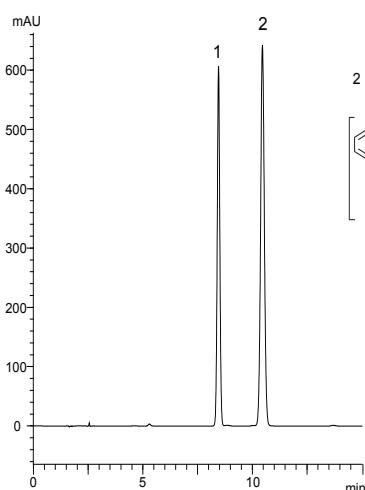
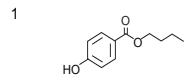
Detection : UV at 254 nm

Injection : 20  $\mu\text{L}$

(日本薬局方収載原案記載条件: 純度試験)

## アトルバスタチンカルシウム水和物 Atorvastatin calcium hydrate

R100422H



Column : YMC-Pack Pro C18 RS (5  $\mu\text{m}$ , 8 nm)

250 X 4.6 mmI.D.

Eluent : citric acid buffer\*/acetonitrile/THF (53/27/20)

\*Dissolve 10.5 g citric acid monohydrate in 900 mL water

→ adjust pH 4.0 by 28% ammonia solution → add water to make 1000 mL

Flow rate : 1.2 mL/min

Temperature : 40°C

Detection : UV at 254 nm

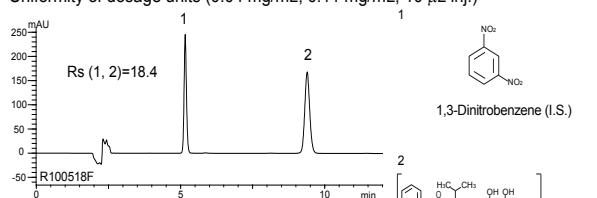
Injection : 10  $\mu\text{L}$  (0.13, 0.4 mg/mL)

(日本薬局方収載原案記載条件: 定量法)

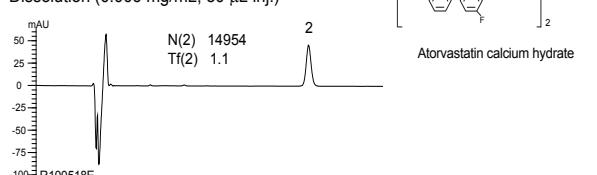
# Additional Data

## アトルバスタチンカルシウム錠 Atorvastatin calcium tablets

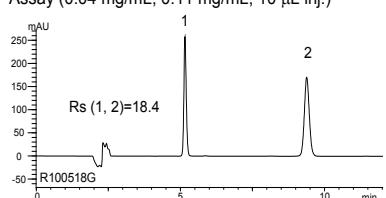
Uniformity of dosage units (0.04 mg/mL, 0.11 mg/mL, 10 µL inj.)



Dissolution (0.006 mg/mL, 50 µL inj.)



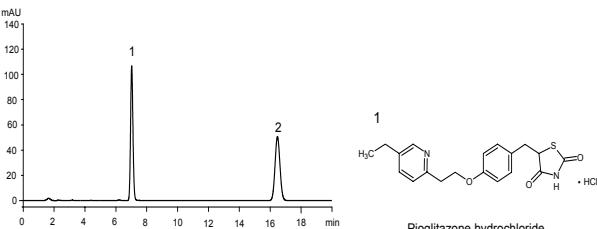
Assay (0.04 mg/mL, 0.11 mg/mL, 10 µL inj.)



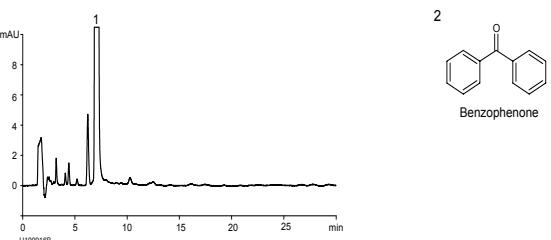
Column : YMC-Pack ODS-A (5 µm, 20 nm)  
250 X 4.6 mmI.D.  
Eluent : citric acid buffer\*/acetonitrile/THF (53/27/20)  
※Dissolve 10.5 g citric acid monohydrate in 900 mL water  
→ adjust pH 4.0 by 28% ammonia solution → add water to make 1000 mL  
Flow rate : 1.3 mL/min  
Temperature : 30°C  
Detection : UV at 244 nm  
(日本薬局方収載原案記載条件)

## ピオグリタゾン塩酸塩 Pioglitazone hydrochloride

A) Assay: Sample solution\*  
(0.05 mg/mL Pioglitazone HCl, 0.013 mg/mL Benzophenone)



B) Related substances/Organic impurities: Sample solution\*  
(0.2 mg/mL Pioglitazone HCl)



\* Sample solutions were prepared from Pioglitazone HCl supplied as a reagent for laboratory use.

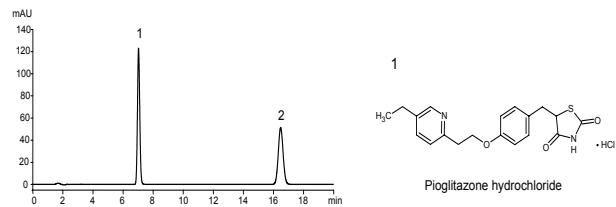
Column : YMC-Triart C18 (5 µm, 12 nm)  
150 X 4.6 mmI.D.  
Eluent : acetonitrile/100 mM CH<sub>3</sub>COONH<sub>4</sub>/acetic acid (25/25/1)  
Flow rate : 0.8 mL/min  
Temperature : 25°C  
Detection : UV at 269 nm  
Injection : A) 20 µL  
B) 40 µL

(The Japanese Pharmacopoeia 15th 2nd supplement, The United States Pharmacopoeia 34th)

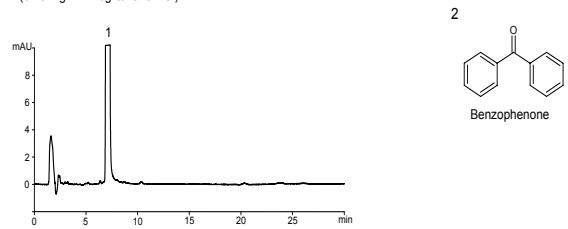
## ピオグリタゾン塩酸塩錠 Pioglitazone hydrochloride tablets

U100927B

A) Assay: Sample solution\*  
(0.05 mg/mL Pioglitazone HCl, 0.013 mg/mL Benzophenone)



B) Organic Impurities: Sample solution\*  
(0.18 mg/mL Pioglitazone HCl)



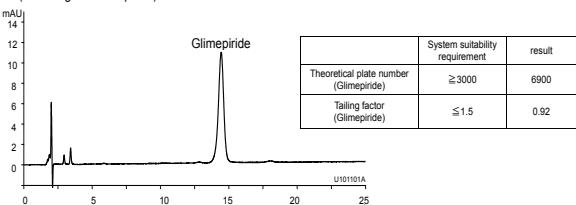
\* Sample solutions were prepared from Pioglitazone HCl tablets.

Column : YMC-Triart C18 (5 µm, 12 nm)  
150 X 4.6 mmI.D.  
Eluent : acetonitrile/100 mM CH<sub>3</sub>COONH<sub>4</sub>/acetic acid (25/25/1)  
Flow rate : 0.8 mL/min  
Temperature : 25°C  
Detection : UV at 269 nm  
Injection : A) 20 µL  
B) 40 µL  
(The United States Pharmacopoeia 34th)

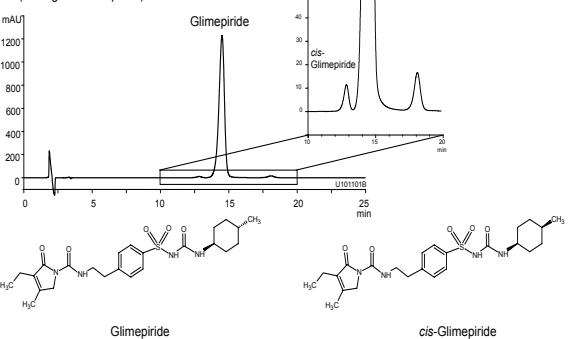
## グリメビリド Glimepiride

U101117A

A) Standard solution\*  
(0.005 mg/mL Glimepiride)



B) Sample solution\*  
(0.5 mg/mL Glimepiride)



\* All standard and sample solutions were prepared from Glimepiride supplied as a reagent for laboratory use.

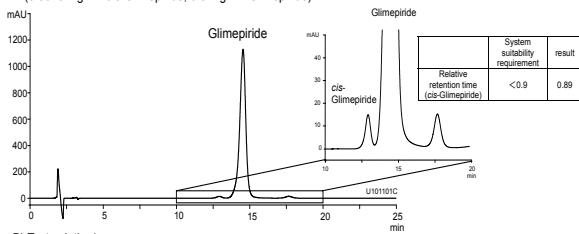
Column : YMC-Pack Diol-NP (5 µm, 12 nm)  
150 X 3.0 mmI.D.  
Eluent : heptane/2-propanol/acetic acid (900/100/1)  
Flow rate : 0.5 mL/min  
Temperature : 25°C  
Detection : UV at 228 nm  
Injection : 10 µL  
The draft for the Japanese Pharmacopoeia ; cis-isomer

# Additional Data

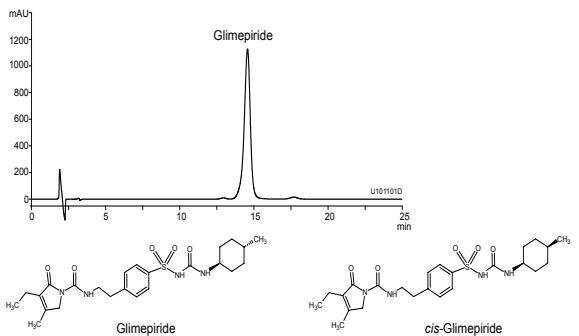
## グリメピリド Glimepiride

U101117B

A) System suitability solution\*  
(0.0025 mg/mL cis-Glimepiride, 0.5 mg/mL Glimepiride)



B) Test solution\*  
(0.5 mg/mL Glimepiride)



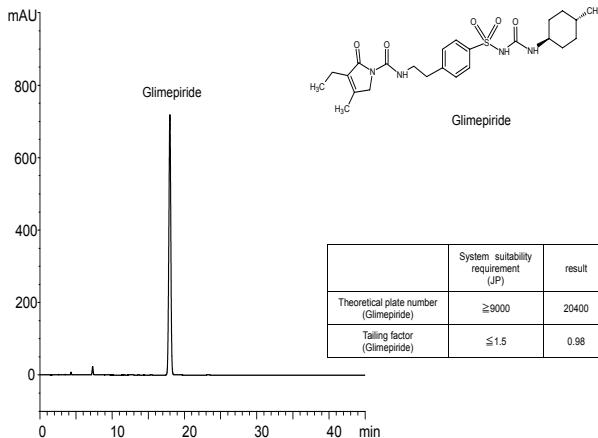
Column : YMC-Pack Diol-NP (5  $\mu$ m, 12 nm)  
150 X 3.0 mmI.D.  
Eluent : hexane/2-propanol/acetic acid (900/100/1)  
Flow rate : 0.5 mL/min  
Temperature : 25°C  
Detection : UV at 228 nm  
Injection : 10  $\mu$ L

(The United States Pharmacopoeia 34th ; cis-isomer)

\* All system suitability and test solutions were prepared from Glimepiride supplied as a reagent for laboratory use.

## グリメピリド Glimepiride

U101122A



Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
250 X 4.0 mmI.D.  
Eluent : phosphate buffer (pH 2.5)/acetonitrile (50/50)  
phosphate buffer : dissolve 0.5 g of  $NaH_2PO_4$  in 500 mL water and adjust pH 2.5 with  $H_3PO_4$   
Flow rate : 1.0 mL/min  
Temperature : 25°C  
Detection : UV at 228 nm  
Injection : 20  $\mu$ L  
Sample : Glimepiride\* (0.2 mg/mL, correspond to standard and sample solution)  
(The draft for the Japanese Pharmacopoeia; Assay, The United States Pharmacopoeia 34th; Assay, The European Pharmacopoeia 7th; Assay)

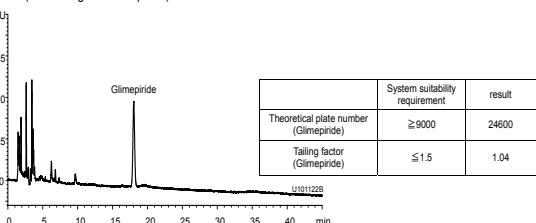
\* A reagent for laboratory use

## グリメピリド Glimepiride

U101124A

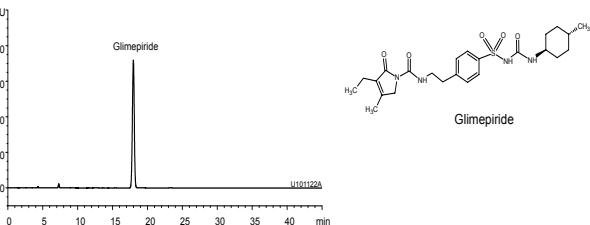
A) Standard solution\*

(0.0002 mg/mL Glimepiride)



B) Sample solution\*

(0.2 mg/mL Glimepiride)

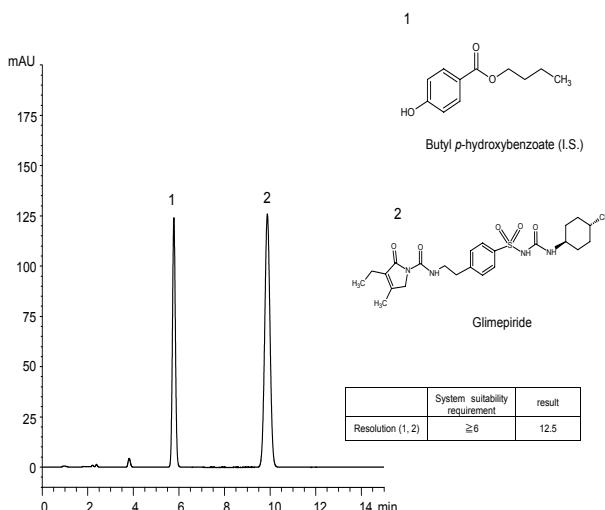


Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
250 X 4.0 mmI.D.  
Eluent : phosphate buffer (pH 2.5)/acetonitrile (50/50)  
phosphate buffer : dissolve 0.5 g of  $NaH_2PO_4$  in 500 mL water and adjust pH 2.5 with  $H_3PO_4$   
Flow rate : 1.0 mL/min  
Temperature : 25°C  
Detection : UV at 228 nm  
Injection : 20  $\mu$ L  
(The draft for the Japanese Pharmacopoeia; Related substances)

\* All standard and sample solutions were prepared from Glimepiride supplied as a reagent for laboratory use.

## グリメピリド錠 Glimepiride Tablets

U101220A



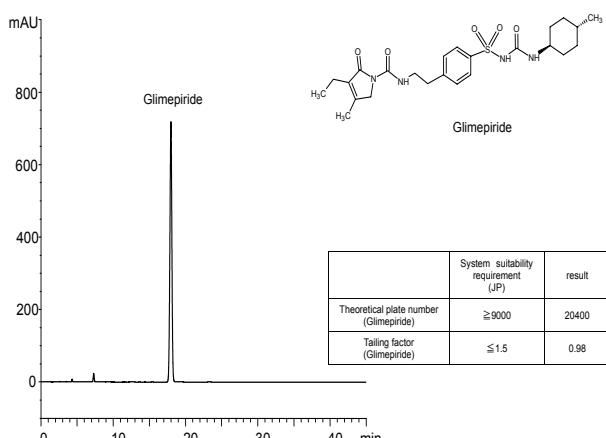
Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
125 X 4.0 mmI.D.  
Eluent : phosphate buffer (pH 3.5)/acetonitrile (50/50)  
phosphate buffer : dissolve 0.5 g of  $NaH_2PO_4$  in 500 mL water and adjust pH 3.5 with  $H_3PO_4$  (1 → 5)  
Flow rate : 0.9 mL/min  
Temperature : 25°C  
Detection : UV at 228 nm  
Injection : 10  $\mu$ L  
Sample : 1. Butyl p-hydroxybenzoate (0.12 mg/mL)  
2. Glimepiride\* (0.06 mg/mL)  
(The draft for the Japanese Pharmacopoeia; Assay)

\* Glimepiride: A reagent for laboratory use

# Additional Data

グリメピリド  
Glimepiride

U101122A



Column : J'sphere ODS-M80 (4  $\mu$ m, 8 nm)  
250 X 4.0 mmI.D.  
Eluent : phosphate buffer (pH 2.5)/acetonitrile (50/50)  
phosphate buffer : dissolve 0.5 g of  $\text{NaH}_2\text{PO}_4$  in 500 mL water and adjust pH 2.5 with  $\text{H}_3\text{PO}_4$ .  
Flow rate : 1.0 mL/min  
Temperature : 25°C  
Detection : UV at 228 nm  
Injection : 20  $\mu$ L  
Sample : Glimepiride\* (0.2 mg/mL, correspond to standard and sample solution)  
(The draft for the Japanese Pharmacopoeia; Assay, The United States Pharmacopoeia 34th; Assay, The European Pharmacopoeia 7th; Assay)

\* A reagent for laboratory use

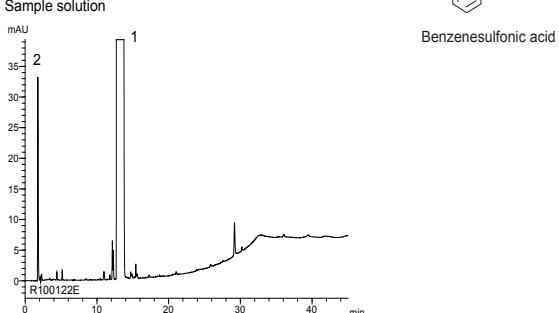
アムロジピンベシル酸塩(第十五改正日本薬局方第一追補記載条件)

Amlodipine besilate (The Japanese Pharmacopoeia 15th Edition Supplement I) R100122G

Standard solution



Sample solution



Column : YMC-Triart C18 (3  $\mu$ m, 12 nm)

150 X 4.6 mmI.D.

Eluent : A) water/TFA (5000/1)

B) acetonitrile/TFA (5000/1)

20-80% B (0-30 min), 80% B (30-45 min)

Flow rate : 1.0 mL/min

Temperature : 35°C

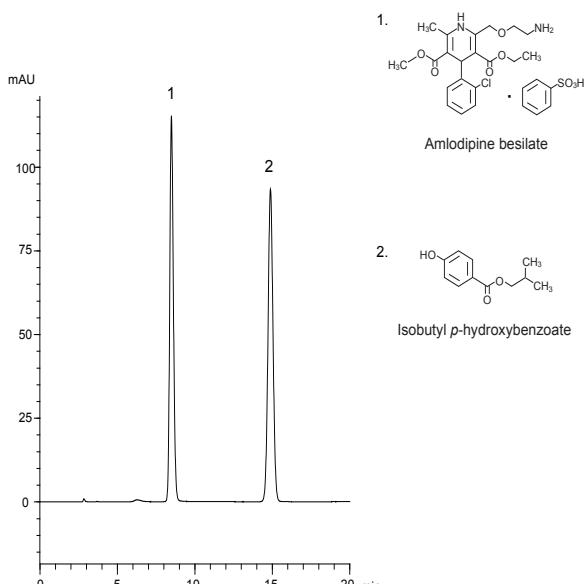
Detection : UV at 237 nm

Injection : 10  $\mu$ L

(第十五改正日本薬局方第一追補記載条件；純度試験)

アムロジピンベシル酸塩(第十五改正日本薬局方第一追補記載条件)

Amlodipine besilate (The Japanese Pharmacopoeia 15th Edition Supplement I) R100127C

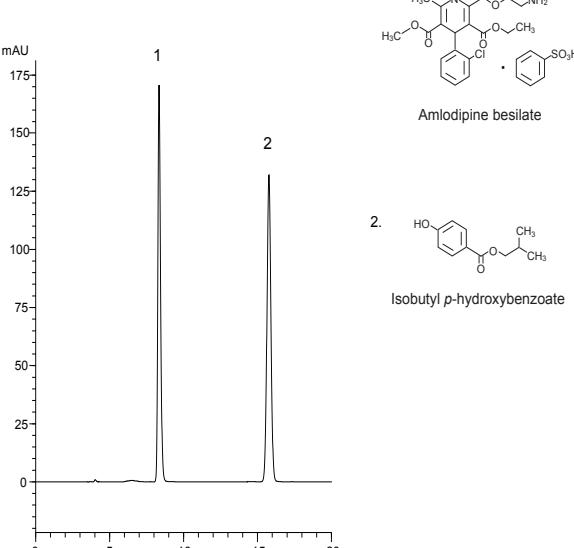


Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
150 X 4.6 mmI.D.  
Eluent : methanol/  $\text{KH}_2\text{PO}_4$  aq<sup>\*\*</sup> (65/35)  
※ Dissolve 4.1 g of  $\text{KH}_2\text{PO}_4$  in water to make 1000 mL  
Flow rate : 0.6 mL/min  
Temperature : 25°C  
Detection : UV at 237 nm  
Injection : 20  $\mu$ L (28, 30  $\mu$ g/mL)

(第十五改正日本薬局方第一追補記載条件；定量法)

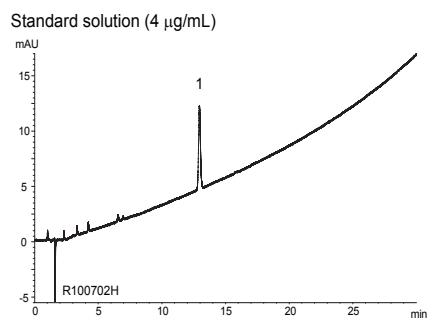
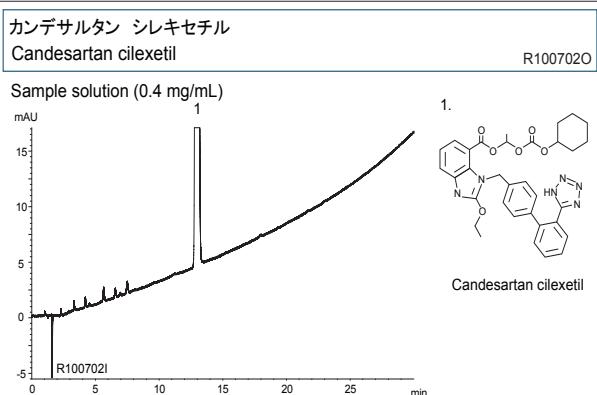
アムロジピンベシル酸塩(第十五改正日本薬局方第一追補分析条件)

Amlodipine besilate (The Japanese Pharmacopoeia 15th Edition Supplement I) R090316D



Column : Hydrosphere C18 (5  $\mu$ m, 12 nm)  
150 X 4.6 mmI.D.  
Eluent :  $\text{KH}_2\text{PO}_4$  aq<sup>\*\*</sup>/methanol (35/65)  
※ Dissolve 4.1 g of  $\text{KH}_2\text{PO}_4$  in water to make 1000 mL  
Flow rate : 0.5 mL/min  
Temperature : 25°C  
Detection : UV at 237 nm  
Injection : 20  $\mu$ L (28, 30  $\mu$ g/mL)

# Additional Data

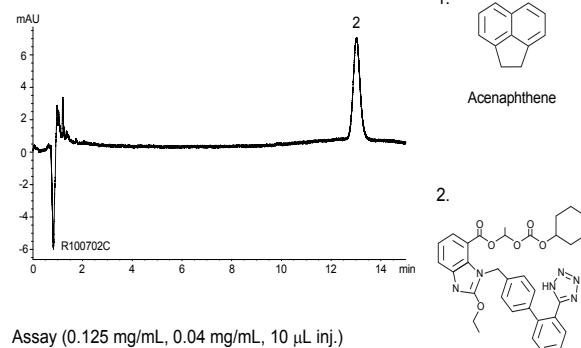


Column : J'sphere ODS-M80 (4 µm, 8 nm)  
150 X 4.0 mmI.D.  
Eluent : A) acetonitrile/water/acetic acid (57/43/1)  
B) acetonitrile/water/acetic acid (90/10/1)  
0-100% B (0-30 min)  
Flow rate : 0.8 mL/min  
Temperature : 25°C  
Detection : UV at 254 nm  
Injection : 10 µL

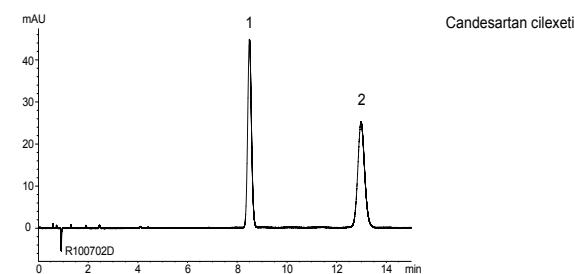
(日本薬局方収載原案記載条件：純度試験)



Dissolution (2 µg/mL, 50 µL inj.)

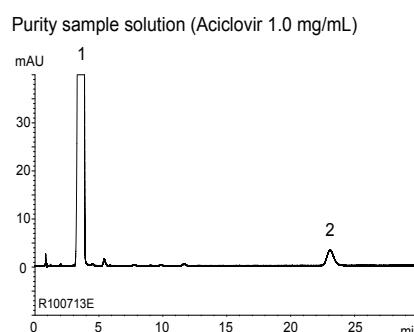
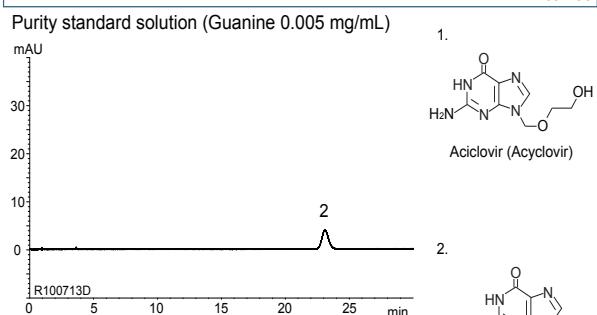
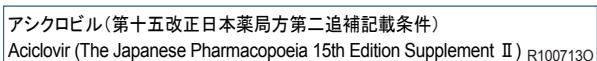


Assay (0.125 mg/mL, 0.04 mg/mL, 10 µL inj.)



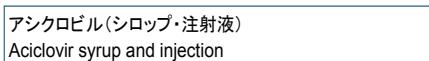
Column : J'sphere ODS-M80 (4 µm, 8 nm)  
150 X 4.0 mmI.D.  
Eluent : acetonitrile/water/acetic acid (57/43/1)  
Flow rate : 1.4 mL/min  
Temperature : 25°C  
Detection : UV at 254 nm

(日本薬局方収載原案記載条件)

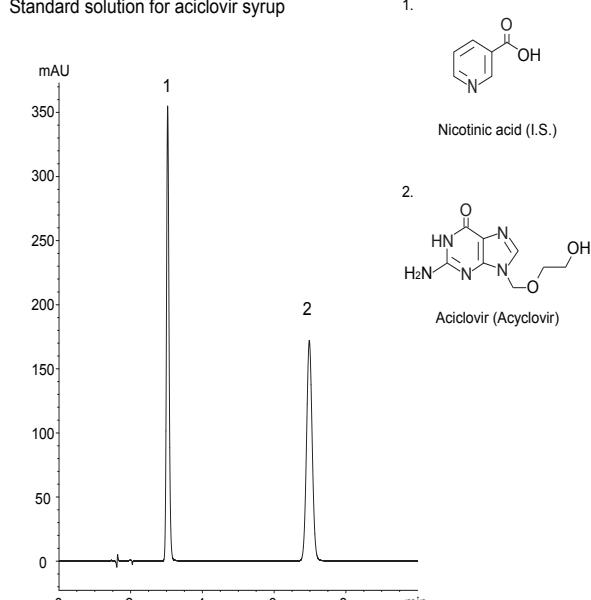


Column : YMC-Pack ODS-A (3 µm, 30 nm)  
100 X 4.6 mmI.D.  
Eluent : phosphate buffer containing 1-decansulfonic acid sodium salt※/acetonitrile (1000/40)  
※Dissolve 1.0 g 1-decansulfonic acid sodium salt and 6.0 g NaH<sub>2</sub>PO<sub>4</sub>·2H<sub>2</sub>O in 1000 mL water → adjust pH 3.0 by H<sub>3</sub>PO<sub>4</sub>  
Flow rate : 1.4 mL/min (adjust the flow rate so that the retention time of aciclovir is about 3 min)  
Temperature : 20°C  
Detection : UV at 254 nm  
Injection : 10 µL

(第十五改正日本薬局方第二追補記載条件)



Standard solution for aciclovir syrup



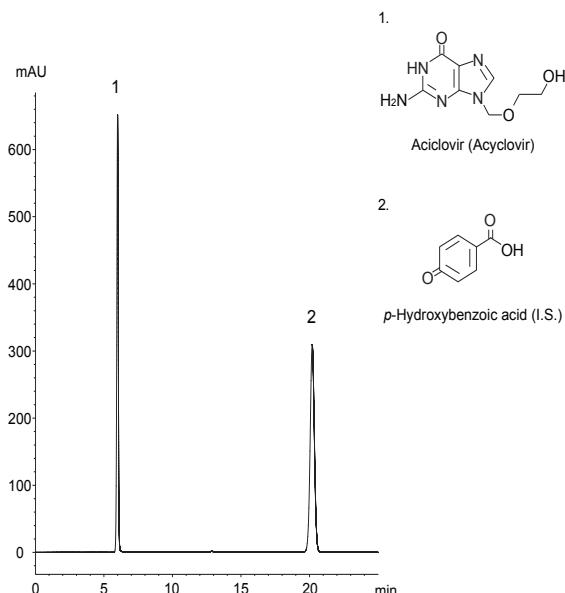
Column : YMC-Triart C18 (5 µm, 12 nm)  
150 X 4.6 mmI.D.  
Eluent : phosphate buffer※/methanol (950/50)  
※Dissolve 1.45 g of H<sub>3</sub>PO<sub>4</sub> and 25 mL of 1 mol/L CH<sub>3</sub>COOH in water to make 900 mL → adjust pH 2.5 by 1 mol/L NaOH → add water to make 1000 mL  
Flow rate : 1.0 mL/min (adjust the flow rate so that the retention time of aciclovir is about 5 min)  
Temperature : 25°C  
Detection : UV at 254 nm  
Injection : 20 µL (0.05 mg/mL, 0.032 mg/mL)

(日本薬局方収載原案記載条件)

# Additional Data

シロップ用アシクロビル  
Aciclovir for syrup

R100720B



Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
 250 X 4.6 mmI.D.  
 Eluent : phosphate buffer containing 1-octansulfonic acid sodium salt\*/acetonitrile (950/50)  
 \*Dissolve 7.8 g of NaH<sub>2</sub>PO<sub>4</sub>·2H<sub>2</sub>O and 0.85 g of 1-octansulfonic acid sodium salt in 900 mL of water → adjust pH 3.0 by H<sub>3</sub>PO<sub>4</sub> → add water to make 950 mL  
 Flow rate : 1.3 mL/min (adjust the flow rate so that the retention time of aciclovir is about 5 min)  
 Temperature : 40°C  
 Detection : UV at 254 nm  
 Injection : 20  $\mu$ L (0.1, 0.08 mg/mL)

(日本薬局方収載原案記載条件)

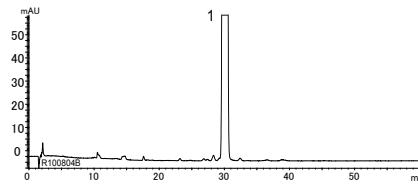
ブテナфин塩酸塩  
Butenafine hydrochloride

R1010050

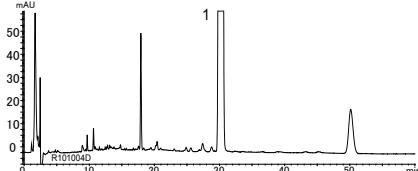
Commercially available reagent  
(0.6  $\mu$ g/mL, correspond to purity standard solution)



Commercially available reagent  
(0.6 mg/mL, correspond to purity sample solution)



Butenafine cream methanol extract  
(0.6 mg/mL butenafine)



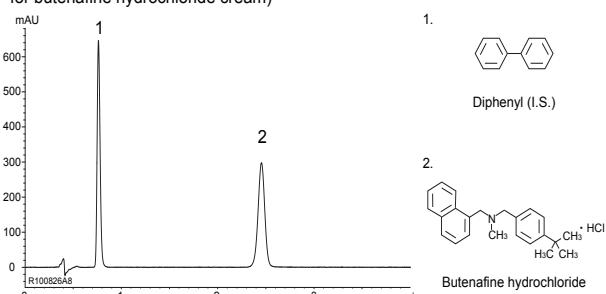
Column : YMC-Triart C18 (3  $\mu$ m, 12 nm)  
 150 X 3.0 mmI.D.  
 Eluent : A) 0.5 mM CH<sub>3</sub>COONH<sub>4</sub>  
 B) acetonitrile  
 40-80% B (0-10 min), 80% B (10-60 min)  
 Flow rate : 0.4 mL/min  
 Temperature : 40°C  
 Detection : UV at 217 nm  
 Injection : 10  $\mu$ L

(日本薬局方収載原案記載条件)

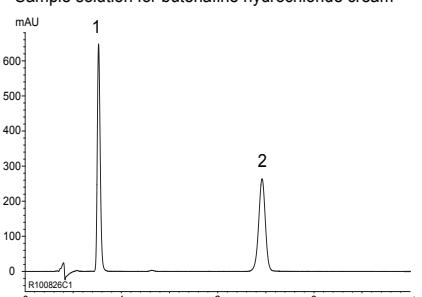
ブテナфин塩酸塩液・スプレー・クリーム  
Butenafine hydrochloride solution and spray and cream

R100830A

Comercially available reagent  
(0.5, 0.17 mg/mL, correspond to standard solution  
for butenafine hydrochloride cream)



Sample solution for butenafine hydrochloride cream

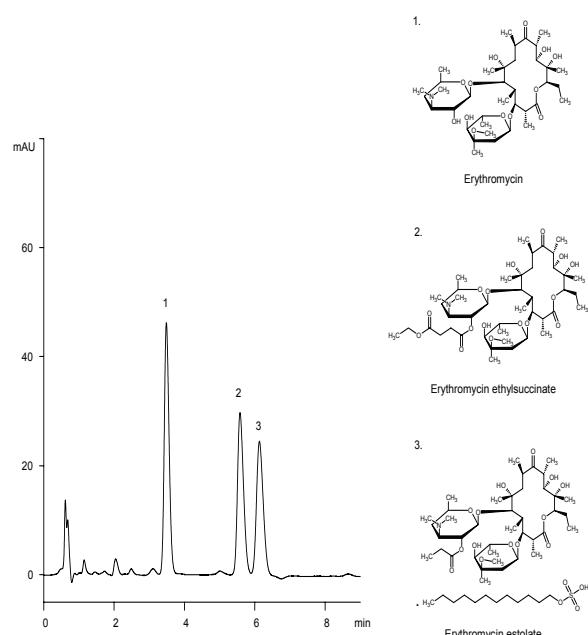


Column : YMC-Pack Pro C8 (3  $\mu$ m, 12 nm)  
 50 X 3.0 mmI.D.  
 Eluent : 1 mM CH<sub>3</sub>COONH<sub>4</sub>/acetonitrile (1/4)  
 Flow rate : 0.7 mL/min (adjust the flow rate so that the retention time of butenafine is about 2.5 min)  
 Temperature : 40°C  
 Detection : UV at 282 nm  
 Injection : 5  $\mu$ L

(日本薬局方収載原案記載条件)

エリスロマイシン  
Erythromycin antibiotic drugs

F100329A

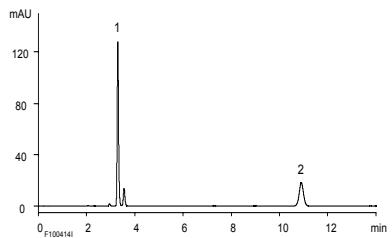


Column : YMC-Triart C18 (3  $\mu$ m, 12 nm)  
 50 X 2.0 mmI.D.  
 Eluent : 20 mM KH<sub>2</sub>PO<sub>4</sub>-K<sub>2</sub>HPO<sub>4</sub>(pH 7.9)/acetonitrile/methanol (40/45/15)  
 Flow rate : 0.2 mL/min  
 Temperature : 70°C  
 Detection : UV at 210 nm  
 Injection : 1  $\mu$ L (2 mg/mL)

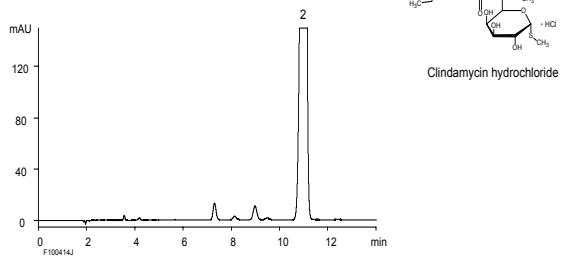
# Additional Data

## クリンダマイシン塩酸塩（米国薬局方記載条件） Clindamycin hydrochloride (The United States Pharmacopoeia) F100416A

A) Standard solution  
(0.05 mg/mL Lincomycin HCl, 0.1 mg/mL Clindamycin HCl)

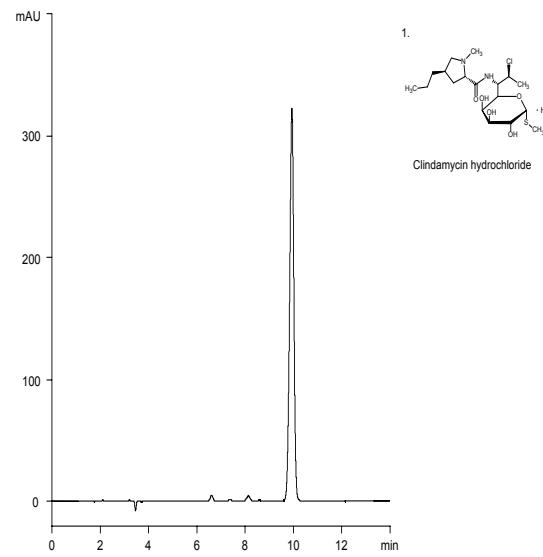


B) Test solution  
(5.0 mg/mL Clindamycin HCl)



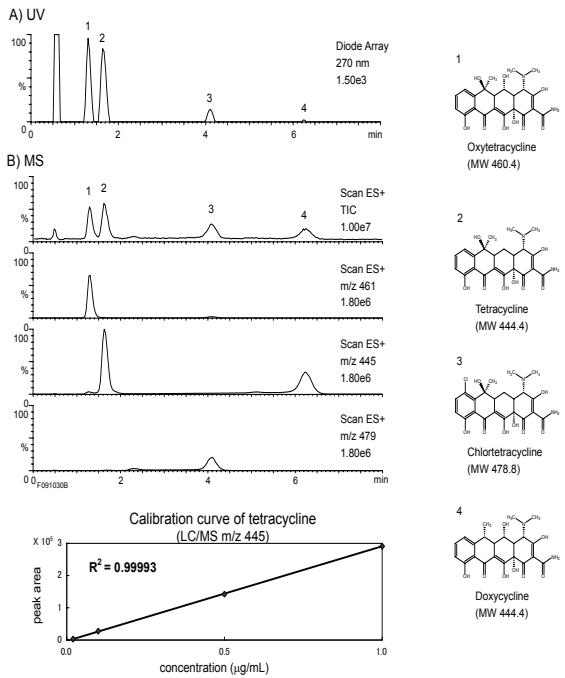
Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
250 X 4.6 mmI.D.  
Eluent : 50 mM KH<sub>2</sub>PO<sub>4</sub> (pH 7.5 adjusted by 8 M KOH)/acetonitrile (55/45)  
Flow rate : 1.0 mL/min  
Temperature : 25°C  
Detection : UV at 210 nm  
Injection : A) 10  $\mu$ L  
B) 10  $\mu$ L

## クリンダマイシン塩酸塩（第十五改正日本薬局方第二追補記載条件） Clindamycin hydrochloride (The Japanese Pharmacopoeia 15th Edition Supplement II) F100416B



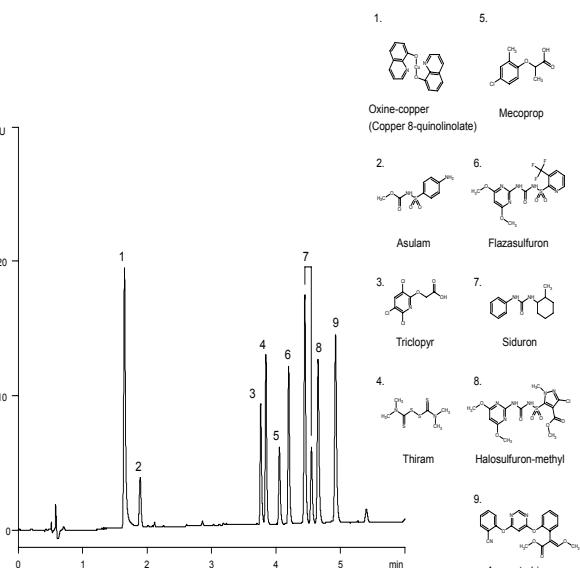
Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
250 X 4.6 mmI.D.  
Eluent : 50 mM KH<sub>2</sub>PO<sub>4</sub> (pH 7.5 adjusted by 8 M KOH)/acetonitrile (55/45)  
Flow rate : 1.1 mL/min  
Temperature : 25°C  
Detection : UV at 210 nm  
Injection : 20  $\mu$ L (1.0 mg/mL)  
(第十五改正日本薬局方第二追補記載条件；定量法)

## テトラサイクリン系抗生物質のLC/MS分析 LC/MS analysis of tetracycline antibiotics F100128B



Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
50 X 2.0 mmI.D.  
Eluent : acetonitrile/water/formic acid (15/85/0.1)  
Flow rate : 0.4 mL/min  
Temperature : 40°C  
Detection : A) UV at 270 nm  
B) ESI positive-mode  
Injection : 10  $\mu$ L (1  $\mu$ g/mL)

## ゴルフ場使用農薬の高速分析 Rapid analysis of pesticides used on golf course F100326C

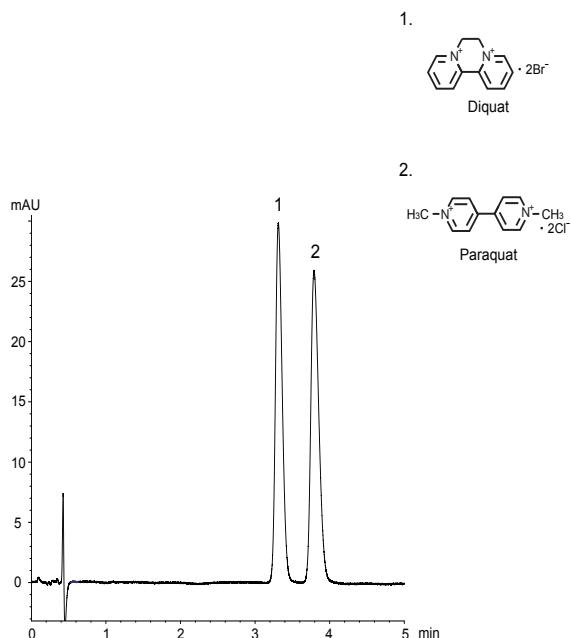


Column : YMC-UltraHT Hydrosphere C18 (2  $\mu$ m, 12 nm)  
100 X 3.0 mmI.D.  
Eluent : A) 20 mM KH<sub>2</sub>PO<sub>4</sub> (pH 3.3, adjusted with H<sub>3</sub>PO<sub>4</sub>)  
B) acetonitrile  
10% B (0-0.5 min), 10-50% B (0.5-3 min), 50-60% B (3-5 min),  
60% B (5-6 min)  
Flow rate : 1.1 mL/min  
Temperature : 38°C  
Detection : UV at 240 nm  
Injection : 10  $\mu$ L (1  $\mu$ g/mL)  
LC instrument : Agilent 1290 Infinity LC

# Additional Data

ビピリジニウム系除草剤(ジクワット、パラコート)  
Bipyridinium herbicides (diquat, paraquat)

R091201B

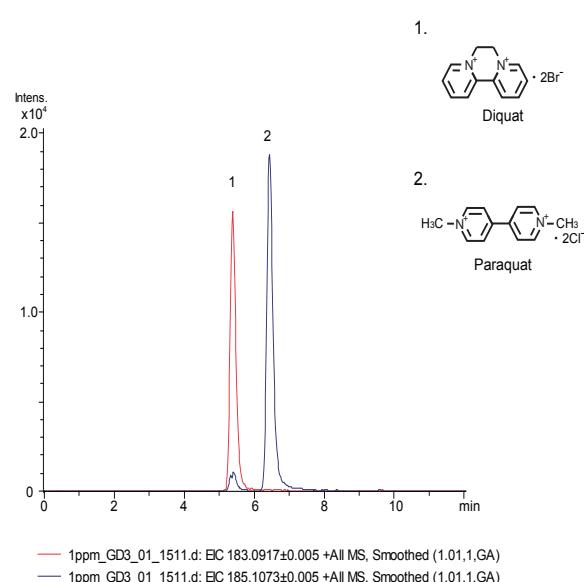


Column : YMC-Triart C18 (3  $\mu$ m, 12 nm)  
50 X 2.0 mmI.D.  
Eluent : water/acetonitrile/HFBA\* (95/5/0.1)  
Flow rate : 0.4 mL/min  
Temperature : 37°C  
Detection : UV at 290 nm  
Injection : 1  $\mu$ L (0.1 mg/mL)

\*heptafluorobutyric acid

ビピリジニウム系除草剤(ジクワット、パラコート) -LC/MS  
Bipyridinium herbicides (diquat, paraquat) -LC/MS

R100323A



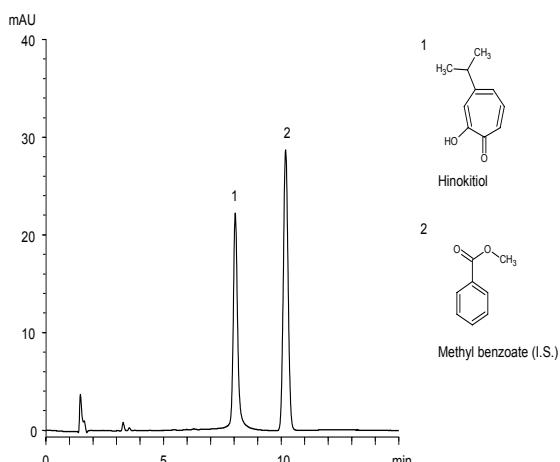
Courtesy of J. Watanabe, Bruker Daltonics K.K.

Column : YMC-Triart C18 (3  $\mu$ m, 12 nm)  
50 X 2.0 mmI.D.  
Eluent : A) water/HFBA\* (100/0.1)  
B) acetonitrile/water/HFBA\* (90/10/0.1)  
2-10% B (0-8 min), 10-95% B (8-8.01 min), 95% B (8.01-9 min),  
95-2% B (9-9.01 min), 2% B (9.01-12 min)  
Flow rate : 0.3 mL/min  
Temperature : 40°C  
Detection : Bruker Daltonics micrOTOF II, ESI, positive mode  
Injection : 5  $\mu$ L (1  $\mu$ g/mL)

\*heptafluorobutyric acid

ヒノキチオール  
Hinokitiol

Q090925G



Column : YMC-Triart C18 (5  $\mu$ m, 12 nm)  
150 X 3.0 mmI.D.  
Eluent : acetonitrile/0.1% H<sub>3</sub>PO<sub>4</sub> (40/60)  
Flow rate : 0.425 mL/min  
Temperature : 40°C  
Detection : UV at 254 nm  
Injection : 4  $\mu$ L (0.01 mg/mL, 0.1  $\mu$ L/mL)



# APPLICATION DATA COLLECTIONS⑤

化合物名インデックス  
**Index of Analytes**

**A**

Acacetin	74
Acenaphthene	98,128
Acenaphthylene	128
Acetaldehyde 2,4-DNPH	127,128
Acetaminophen	90,91,92
Acetic acid	58
Acetoacetyl-CoA	18
Acetone 2,4-DNPH	127,128
Acetylacetone	135
5-Acetylamino-6-amino-3-methyluracil	107
N-Acetyl-chitobiose	28
N-Acetyl-chitopentaose	28
N-Acetyl-chitoltetraose	28
N-Acetyl-chitotriose	28
Acetyl-CoA	18
6"- <i>o</i> -Acetyldaidzin	60
6"- <i>o</i> -Acetylgenistin	60
N-Acetylglucosamine	28
6"- <i>o</i> -Acetylglycitin	60
N-Acetylprocainamide	105
Acid Red	66
Acrolein 2,4-DNPH	127,128
Acyclovir	105
Adenine	34
Adenosine	34,35
Adenylate kinase	56,57
5'-ADP	35
ADP-D-glucose	36,37
Aflatoxin B <sub>1</sub>	78,79
Aflatoxin B <sub>2</sub>	78,79
Aflatoxin G <sub>1</sub>	78,79
Aflatoxin G <sub>2</sub>	78,79
Alachlor	124
Alanine	41
L-Alanine	41,42
Albiflorin	71
Albumin	52,53
Aldicarb	124
Allantoic acid	108
Allantoin	17,108
Allopurinol	106,107
Aloin A	76
Aloin B	76
Amaranth	66
Ametryn	122
<i>p</i> -Aminobenzoic acid (PABA)	14,15,17
<i>o</i> -Aminophenol	136
<i>m</i> -Aminophenol	136
<i>p</i> -Aminophenol	136
Aminopterin	103
Amitriptyline hydrochloride	97,98
Amoxicillin	118,119
5'-AMP	35,36
Ampicilline	111,118
Amyloid $\beta$ -protein	47
Androsterone	84

*trans*-Androsterone 84

Angiotensin I 42,43,44,45

[Asn<sup>1</sup>,Val<sup>5</sup>] Angiotensin I 42[Val<sup>5</sup>] Angiotensin I 42

Angiotensin II 42,43,45,47

Angiotensin III 42,43,46

Anilofos 121

*o*-Anisic acid 130*m*-Anisic acid 130*p*-Anisic acid 130

Annatto pigment 66

Anthracene 128

 $\alpha_1$ -Antitrypsin 53

Apigenin 73,74

Apronlide 92

Arabitol 21

Arachidonic acid 59

Arbutin 70,71,77,78

Arginine 41

L-Arginine 41,42

L-Ascorbic acid 13,15,16,17,19,90

L-Ascorbic acid 2,4-DNPH 19

Asparagine 41

L-Asparagine 42

Aspartame 67

Aspartic acid 41

L-Aspartic acid 41,42

Asulam 121,122

5'-ATP 35

Atraton 122,123

Atrazine 122,123

Atrazine-desethyl 122,123

Atrazine-desisopropyl 122,123

Atrazine-2-hydroxy 123

Atropine sulfate 69,70

Azamethiphos 121

AZT 104

**B**

Bacampicillin hydrochloride 118

Baicalein 73,74

Baicalin 70,71,75

BAM-12P 45

Barbaloin 70,71,76

Beclomethasone 80,82

Beclomethasone dipropionate 82

Bendiocarb 124

Benfotiamine 16,17,91

Bensulide 121,122

Benzaldehyde 2,4-DNPH 127,128

Benzalkonium chloride 94,95

Benzene 80,128

Benzethonium chloride 93,94,95

Benzo [a] pyrene 128

Benzo [b] fluoranthene 128

Benzo [e] pyrene 128

Benzo [g,h,i] perylene 128

Benzo [k] fluoranthene	128	Cefoperazone sodium	115,116
Benzocaine	102	Cefotaxime sodium	113,116,117
Benzofenap	121	Cefoxitin sodium	113,117,118
Benzoic acid	62,63,67,105,129	Cefsulodin sodium	113
Benzylpenicillin potassium	118	Ceftriaxone sodium	116,117
Bepridil hydrochloride	101	Cefuroxime sodium	113
Betamethasone	80,82	Cephalexin	111,112,113,114,119
Betamethasone valerate	82	Cephaloglycin	112,113,117
Bezafibrate	99	Cephaloridine	112,113,114
1-1'-Bi-2-naphthol	137	Cephalosporin C potassium	113,114,117
Biotin	14,15	Cephalothin sodium	115,116
Bisbentiamine	17	Cephapirin sodium	113,117
Bisdemethoxycurcumin	62	Cephradine	113
Bombesin	44	Chenodeoxycholic acid (CDAC)	86
Bradykinin	44,45,46	Chloramphenicol	111
Brassicasterol	87	Chlorhexidine hydrochloride	95
Briliant Blue FCF	66	Chloridazon	121
Bromovalerylurea	92,93	o-Chloroacetophenone	134
BSA	48,49,51	m-Chloroacetophenone	134
Bucetine	91	p-Chloroacetophenone	134
Buflalin	89	o-Chlorobenzoic acid	130,131
Butacaine	102	m-Chlorobenzoic acid	130,131
Butachlor	124	p-Chlorobenzoic acid	92,130,131
Butafenacil	121	Chlorogenic acid	61,62
p-Butoxybenzoic acid	129,130	o-Chlorophenol	132,133
p-tert-Butylbenzoic acid	129,130	m-Chlorophenol	132,133
tert-Butylhydroquinone (TBHQ)	64,65	p-Chlorophenol	132,133
BHA [3(2)-tert-Butyl-4-hydroxyanisol]	65	Chlorophyll a	79
BHT (2,6-Di-tert-butyl-4-methylphenol)	65	Chlorophyll b	79
Butyl p-hydroxybenzoate	63,78,96	Chloropropham	124
<b>C</b>			
trans-Caffeic acid	61,62	Chlorotetracycline	111
Caffeine	13,14,67,70,90,91,92,93, 95,107,117,118,119	Chlorpheniramine maleate	90,91,93,94,95,96
Campesterol	87	Chlorpromazine hydrochloride	98
Capronaldehyde 2,4-DNPH	127,128	Chlorthalidone	102,103,139
Capsaicin	79	Cholecalciferol	8,9,10
Carbadox	109	Cholesterol	87
Carbamazepine	99	Cholic acid (CA)	86
Carbendazim	121	Chondroitin, Na salt	31
Carbonic anhydrase	53	Chondroitin sulfate A,Na salt	31
Carnitine chloride	106	Chondroitin sulfate B,Na salt	31
$\alpha$ -Carotene	8	Chondroitin sulfate C,Na salt	32
$\beta$ -Carotene	8,9	Chromafenozone	121
Casein	57	Chrysene	128
(+)-Catechin	75,76	Chrysin	73,74
Catechol	131	Chrysoeriol	74
CBZ-Phenylalanine (Z-Phe-OH)	138,140,142	$\alpha$ -Chymotrypsinogen A	51
CCK-Octapeptide	45	Cinchonidine	69
5'-CDP	35	Cinchonine	69,70,102
CDP-D-glucose	36,37	trans-Cinnamic acid	61,62
Cefaclor	112,113	Cinobufagin	89
Cefadroxil	113,114	Cinoxacin	111,112
Cefamandole sodium	115,116	Citric acid	58
Cefatrizine propylene glycol	113,114	Clofibrate	99
Cefazolin sodium	113	Cloquintocet-mexyl	121

Codeine	93
Coenzyme A	18
Coenzyme A glutathione disulfide	18
Coenzyme A oxidized	18
Color additives (Acid red)	66
Color additives (Amaranth)	66
Color additives (Brilliant Blue FCF)	66
Color additives (Erythrosine)	66
Color additives (Fast Green FCF)	66
Color additives (Indigo Carmine)	66
Color additives (New Coccine)	66
Color additives (Phloxine)	66
Color additives (Rose Bengal)	66
Color additives (Sunset Yellow FCF)	66
Color additives (Tartrazine)	66
Conalbumin	51
Copper 8-quinolinolate	121
Coronene	128
Corticosterone	80,82,83
Corticosterone acetate	80,82
Cortisone	80,82
Cortisone acetate	80,82
p-Coumaric acid	61,62
Creatinine	53,127
o-Cresol	133
m-Cresol	133
p-Cresol	133
Crimidine	122
Crotonaldehyde 2,4-DNPH	127,128
5'-CTP	35
Cuminic acid	129,130
Curcumin 1 (Curcumin)	62
Curcumin 2 (Demethoxycurcumin)	62
Curcumin 3 (Bisdemethoxycurcumin)	62
Cyanazine	122,123
Cyanocobalamin	13,14,15,16
Cyazofamid	121
α-Cyclodextrin	27,28
β-Cyclodextrin	27,28
γ-Cyclodextrin	27,28
Cylufenamid	121
L-Cystine	41,42
Cytidine	34,35
Cytochrome c	47,48,50,51,56,57
Cytochrome c (dimer)	50
Cytochrome c (hexamer)	50
Cytochrome c (tramer)	50
Cytochrome c (trimer)	50
Cytocine	34

**D**

D4T	104
Daidzein	60
Daidzin	60
5'-dAMP	35
5'-dCMP	35
DDC	104

DDI	104
Dehydroacetic acid	62,63
Dehydroisoandrosterone	84
Demethoxycurcumin	62
Deoxyadenosine	34,35
Deoxycorticosterone	80,81,82,83
Deoxycorticosterone acetate	82
Deoxycytidine	34,35
Deoxyguanosine	34,35
Deoxyinosine	34,35
Deoxyuridine	103
Desipramine hydrochloride	97,98
Dexamethasone	80,82
Dextromethorphan hydrobromide	90
5'-dGMP	35
Δ Di-0S	21
Δ Di-4S	21
Δ Di-6S	21
Δ Di-diS <sub>D</sub>	21
Δ Di-diS <sub>E</sub>	21
Δ Di-triS	21
Diaveridine	109
Dibenzo [a,h] anthracene	128
Dicethiamine hydrochloride	17
2,4-Dichlorophenol	132
2,6-Dichlorophenol	132
Dicloxacillin sodium	118
Diethanolamine	135
1,1-Diethylurea	136
1,3-Diethylurea	136
Digitoxigenin	88
Digitoxin	70,71,88
Digoxigenin	88
Digoxigenin-bis-digitoxoside	88
Digoxin	88
Dihydrocapsaicin	79
Dihydrocodeine phosphate	90,91
Dihydroquinidine	69
Dihydroquinine	69
2,3-Dihydroxybenzoic acid	129
2,4-Dihydroxybenzoic acid	129
2,5-Dihydroxybenzoic acid	129
3,4-Dihydroxybenzoic acid	129
3,5-Dihydroxybenzoic acid	129
3,4-Dihydroxyphenylacetic acid	106
3,4-Dihydroxyphenylalanine (DOPA)	106
Diltiazem hydrochloride	100,101,102
Dimethirimol	121
7,12-Dimethylbenzo [a] anthracene	128
o-Dimethyl-β-cyclodextrin	28
N,N-Dimethyllethanolamine	135
2,3-Dimethylphenol	132
2,4-Dimethylphenol	132
2,5-Dimethylphenol	132
2,6-Dimethylphenol	132
3,4-Dimethylphenol	132
3,5-Dimethylphenol	132

1,7-Dimethyluric acid	107	<i>p</i> -Ethoxybenzoic acid	129,130
1,9-Dimethyluric acid	107	Ethylbenzene	82
2,4-Dinitrophenol	132	Ethyleneglycol	126
2,6-Dinitrophenol	132	Ethyl <i>p</i> -hydroxybenzoate	63
Diphenhydramine hydrochloride	96	Ethylurea	136
Diphenyl	86,124,125,128		
Diuron	122,123		
1kb DNA ladder (75-12,126 bp)	39		
Docosahexaenoic acid	59		
<i>n</i> -Dodecyl gallate (DG)	64,65		
DOPA (3,4-Dihydroxyphenylalanine)	106		
Dopamine hydrochloride	106		
Doxepin hydrochloride	97		
Doxorubicin hydrochloride	111		
Dynorphin A (Human,1-13)	44		
<b>E</b>			
$\alpha$ -Ecdysone	87	Flavin adenine dinucleotide disodium	18
$\beta$ -Ecdysone	87	Flavin mononucleotide sodium salt	
Cu (II)-EDTA	63	(Flavin sodium phosphate)	13,14,18
Fe (III)-EDTA	63	Fluocinolone acetonide	80,81,82
Eicosapentaenoic acid	59	Fluocinonide	81,82
Eicosatrienoic acid	59	Fluoranthene	128
Eledoisin related peptide	44	Fluorene	128
$\alpha$ -Endorphin	45	5-Fluorocytosine	34
$\beta$ -Endorphin (Human)	44,45	5-Fluoro-2'-deoxyuridine	103
$\gamma$ -Endorphin	44,45	5-Fluoro-orotic acid	35
[D-Ala <sup>2</sup> ,Met <sup>5</sup> ]-Enkephalin	45	5-Fluorouracil	34,103
Leu-Enkephalin	44,45,46,48	Fluoxymesterone	83,84
Met-Enkephalin	44,45,46,48	Fluphenazine hydrochloride	98
[D-Ala <sup>2</sup> ,Met <sup>5</sup> ]-Enkephalinamide	45	Flurbiprofen	97,100,139,141
Enolase	56,57	Folic acid	13,103
Enoxacin	111	Formaldehyde 2,4-DNPH	127,128
(-)Epicatchin	75,76	1-Fructofuranosyl-D-nystose	23
(-)Epicatechin gallate	75,76	Fructose	20,22
(-)Epigallocatechin	75,76	Fucose	20
(-)Epigallocatechin gallate	75,76	Fucosterol	87
Epinephrine	106	Fullerene (C <sub>60</sub> )	134
Ergocalciferol	8,9,10	Fullerene (C <sub>70</sub> )	134
Erythorbic acid	16,19	Fumaric acid	58,91
Erythritol	21,22	Furathiocarb	121
Erythromycin	119	Furazolidone	109
Erythromycin estolate	119	Furosemide	102,103
Erythromycin ethylsuccinate	119		
Erythrosine	66		
Esculine	70,71		
$\beta$ -Estradiol	85,86		
Estradiol benzoate	85,86		
Estradiol dipropionate	85,86		
Estriol	85		
Estrone	85		
Ethanolamine	135		
Ethenzamide	76,90,91,92,93		
Ethinylestradiol	85,86		
Ethiofencarb	124		
Ethopropazine hydrochloride	98		
Ethosuximide	99		
<b>G</b>			
Galactose	20		
Gallic acid	61,62,77,78		
5'-GDP	35		
GDP-D-mannose	36,37		
Gemfibrozil	99		
Genistein	60		
Genistin	60		
Ginsenoside-Rb <sub>1</sub>	72,73		
Ginsenoside-Rg <sub>1</sub>	72,73		
$\gamma$ -Globulin	53		
Glucose (G <sub>1</sub> )	20,22,24,25,26		
Glutamate dehydrogenase	56,57		
Glutamic acid	41		
L-Glutamic acid	41,42		

Glutamine	41
Glutathione (GSH)	42
Glutathione disulfide (GSSG)	42
Glycerol	21
Glycine	41,42,47
Glycitein	60
Glycitin	60
Glycolic acid	58
Glycyrrhizic acid (Glycyrrhizin)	68,70,71,95
5'-GMP	35,36
5'-GTP	35
Guanine	34
Guanosine	34,35

**H**

Heparan sulfate,Na salt	32
Heparin,Na salt	32
Hesperidin	75
Hexazinone	122
Hexobarbital	138,139
Hinokitiol	135
Hippuric acid	127
Histidine	41
L-Histidine	41,42,106
Homovanillic acid	106
Hordenine sulfate	69,70
Human IgA	53,54,55
Human IgG	52,53,54,55
Human IgM	53
Human IgM ( $\kappa$ ), myeloma protein	54,55
Human IgM ( $\lambda$ ), myeloma protein	55
Human serum	53
Hyaluronic acid,Na salt	32
Hydrochlorothiazide	102,103
Hydrocortisone	80,82,83
Hydrocortisone acetate	80,82
Hydrocortisone succinate	82
Hydroquinone	77,78,131
4'-Hydroxyacetophenone (p-)	71,105,120
m-Hydroxybenzoic acid	129
p-Hydroxybenzoic acid	61,62,129
p-Hydroxybenzoic acid n-butyl ester	92
4-Hydroxy-3-methoxymandelic acid	106
4-Hydroxy-3-methoxyphenylglycol	106
4-Hydroxymethyl-2,6 di-tert-butylphenol (HMBP)	64,65
3-Hydroxy-3-methylglutaryl-CoA (HMG-CoA)	18
Hyodeoxycholic acid (HDCA)	86
Hypoxanthine	34,106,107

**I**

Ibuprofen	90,93,97,140
Imazalil	124,125
Imipramine hydrochloride	97,98
5'-IMP	35,36
Indapamide	140
Indigo Carmine	66
Indometacin (Indomethacin)	89,92

Indoxacarb	121
Inosine	34,35
Inositol	21
Insulin	44,48
Insulin (Bovine)	43,44,47
Insulin (Equine)	43
Insulin (Human)	43,44
Insulin (Porcine)	43,44
Insulin (Sheep)	43,44
Insulin Chain B	45
Iprodion	121
Iprovalicarb	121
Isobarbaloin	76
Isobutyl p-hydroxybenzoate	63
Isobutyraldehyde 2,4-DNPH	127,128
Isoleucine	41
L-Isoleucine	41,42
Isomalt	21
Isonicotinic acid	104,105
Isonicotinic acid hydrazide	104,105
Isophthalic acid	131
p-Isopropylbenzoic acid	129,130
Isopropyl p-hydroxybenzoate	63
Isoproturon	122,123
Isoquercitrin	74
Isoxaflutole	121

**K**

Kaempferol	73
Keratan polysulfate,Na salt	33
1-Kestose	22,23
Ketamine hydrochloride	138
Keratan sulfate,Na salt	33
Ketoprofen	96,97,140

**L**

$\alpha$ -Lactalbumin	47
Lactate dehydrogenase	56,57
Lactic acid	58
Lactitol	21,22
$\beta$ -Lactoglobulin A	51
$\beta$ -Lactoglobulin B	48,51
Lactose	20
Lactosyl fructoside	24
Lanatoside B	88
Lanatoside C	88
Leucine	41
L-Leucine	41,42
Lidocaine	93,100,101,102
Linoleic acid	59
$\gamma$ -Linolenic acid	59
Linuron	122,123
Lipoxygenase	51
Lovastatin	100
Luteolin	74
Lysine	41
L-Lysine	41,42

Lysozyme	47,50,51,53
<b>M</b>	
Maleic acid	58,90,93,95
L-Malic acid	58
Malonic acid	58
Malonyl-CoA	18
6 <sup>11</sup> - <i>o</i> -Malonyldaidzin	60
6 <sup>11</sup> - <i>o</i> -Malonylgenistin	60
6 <sup>11</sup> - <i>o</i> -Malonylglycitin	60
Maltitol	21,22
Maltododecaose (G <sub>12</sub> )	25,26
Maltoheptaose (G <sub>7</sub> )	24,25,26
Maltohexaose (G <sub>6</sub> )	24,25
Maltopentadecaose (G <sub>15</sub> )	25,26
Maltopentaose (G <sub>5</sub> )	24,25,26
Maltose (G <sub>2</sub> )	20,22,24,25
Maltotetradecaose (G <sub>14</sub> )	25,26
Maltotetraose (G <sub>4</sub> )	24,25
Maltotridecaose (G <sub>13</sub> )	25,26
Maltotriose (G <sub>3</sub> )	24,25,26
Maltoundecaose (G <sub>11</sub> )	25,26
Mandelic acid	127
Mannitol	21
Mannose	20
α-Mating factor	44,48
Mecoprop	121
Medroxyprogesterone acetate	85
Menadione	8
Menaquinone	8,12
Mestranol	85
Metazachlor	122,124
Methicillin sodium	118
Methionine	41
L-Methionine	41,42
Methotrexate	103
o-Methoxybenzoic acid	130
m-Methoxybenzoic acid	130
p-Methoxybenzoic acid	130
Methoxyfenozide	121
3-Methoxytyramine hydrochloride	106
Methoxyverapamil hydrochloride	101
Methyl benzoate	95,100
dl-Methylephedrine hydrochloride	90,91
N-Methylethanolamine	135
Methylethyketone 2,4-DNPH	127,128
o-Methylhippuric acid	127
m-Methylhippuric acid	127
p-Methylhippuric acid	127
Methyl p-hydroxybenzoate	63,74,93
Methyl linoleate	59
Methyl linolenate	59
Methyl γ-linolenate	59
Methylmalonyl-CoA	18
N-Methylnicotinamide	104,105
Methyl oleate	59
Methylprednisolone	80,82,83
Methyltestosterone	84
1-Methyluric acid	107
1-Methylxanthine	107
Metobromuron	122,123
Metolachlor	122,124
Metoxuron	122,123
Mouse IgG Fc fragment	53,54
Mouse IgG Fab fragment	54
Mouse monoclonal IgG1	53
Myoglobin	47,50
Myricetin	73
<b>N</b>	
NAD	18
NADH	18
NADP	18
NADPH	18
Nalidixic acid	109,111,112
Naphazoline hydrochloride	93,94,95
Naphthacene	128
Naphthalene	128
1-Naphthol	135
1-(1-Naphthyl)-ethylalcohol	141
Naproanilide	121
Naproxen	96
Narcotine	69,70,91
Naringin	75
Narirutin	75
Neohesperidin	75
Neostigmine methylsulfate	95
Neurotensin	44,47
New Coccine	66
Nicardipine hydrochloride	101,102
Nicotinamide	13,14,15,16,17,18,104,105
Nicotinamide adenine dinucleotide phosphate oxidized form	18
Nicotinamide adenine dinucleotide phosphate reduced form	18
β-Nicotinamide adenine dinucleotide reduced form	18
β-Nicotinamide adenine dinucleotide	18
Nicotinic acid	13,16,17,18,104,105
Nifedipine hydrochloride	101
Niguldipine hydrochloride	101
o-Nitrophenol	132,133
m-Nitrophenol	132,133
p-Nitrophenol	132,133
Nordihydrocapsaicin	79
Nordihydroguaiaretic acid (NDGA)	64,65
Norepinephrine hydrochloride	106
Norethisterone	85
Norfloxacin	111
Norgestrel	86
Noscapine	91
Nystose	22,23

## O

n-Octyl gallate (OG)	64,65
Oflloxacin	111
Olaquindox	109
Oligonucleotides	37,38,39
Orotic acid	15,35
Ouabagenin	88
Ovalbumin	48,51,52
Oxamyl	124
Oxine-copper	121
Oxipurinol	106,107
Oxolinic acid	109,111,112
Oxytetracycline hydrochloride	111,119
Oxytocin	44,45

## P

Paeoniflorin	71
Paeonol	78
Palatinit	21
Palatinose	21,22
Pantothenic acid, Na salt	13
Pantothenyl alcohol (Panthenol)	13,17,18
Papaverine chloride	69,70
Paraxanthine	107
PA-Sugar Chain 001	28,29
PA-Sugar Chain 002	28,29
PA-Sugar Chain 014	28,29
PEG #300 (MW 300)	126
PEG #1,000 (MW 1,000)	126
PEG #4,000 (MW 3,350)	126
PEG #6,000 (MW 8,400)	126
PEG #20,000 (MW 20,000)	126
Penicillin G potassium	118
Penicillin V potassium	118
Pentaglycine	42
Peptide mapping	48,49
Perphenazine	98
Perylene	128
Phenanthrene	128
Phenethicillin potassium	118
Phenobarbital sodium salt	99
Phenol	70,105,117,131
Phenoxyethylpenicillin potassium	118
Phenoxyethylpenicillin potassium	118
Phenylalanine	41
L-Phenylalanine	41,42
o-Phenylenediamine	136
m-Phenylenediamine	136
p-Phenylenediamine	136
Phenylephrine hydrochloride	95
Phenylethylalcohol	141
2-Phenylethyl $\beta$ -cellobioside	76
2-Phenylethyl $\beta$ -gentiobioside	76
2-Phenylethyl $\beta$ -lactoside	76
2-Phenylethyl $\beta$ -maltoside	76
2-Phenylethyl $\beta$ -melibioside	76
Phenylglyoxylic acid	127

$\alpha$ -Phenylphenol	124,125
Phenylpropanolamine hydrochloride	95
Phenytoin	99,101,102
Phloxine	66
Phosphoenolpyruvic acid monopotassium salt	58
Phthalic acid	131
Phylloquinone	8,12
Pilocarpine chloride	69,70
Pipemidic acid	111
Pirimicarb	124
Piromidic acid	109,111,112
Piroxicam	96
Plasmid pBR322	39,40
Poly (A)	37
Polydextrose II	30
Potassium guaiacol sulfonate	91
Prednisolone	80,81,82,83
Prednisolone acetate	81,82
Prednisolone succinate	82
Prednisone	80,82,83
Prenylamine lactate	101
Primidone	99
Procainamide hydrochloride	105
Procaine hydrochloride	102
Prochlorperazine maleate	98
Progesterone	83,85
Proline	41
L-Proline	41,42
Promazine hydrochloride	98
Prometon	122,123
Prometryn	122,123
Propazine	122,123
Propham	124
Propicillin potassium	118
Propionaldehyde 2,4-DNPH	127,128
Propionamide	136
Propionic acid	58
Propionyl-CoA	18
p-Propoxybenzoic acid	129,130
Propranolol hydrochloride	101,102,138,141
n-Propyl gallate (PG)	64,65
Propyl p-hydroxybenzoate	63,68
Proscillarin A	88
Protocatechuic acid	61,62
Pullulan P-5 (MW 5,800)	30,31
Pullulan P-20 (MW 23,700)	30,31
Pullulan P-50 (MW 48,000)	30,31
Pullulan P-800 (MW 853,000)	30,31
Pyrazolynate	121
Pyrene	128
Pyridoxal hydrochloride	16,17
Pyridoxine hydrochloride	13,14,15,16,17,95
Pyritalid	121
Co (III)-1-(2-Pyridylazo)-2-naphthol	135
Fe (III)-1-(2-Pyridylazo)-2-naphthol	135
Ni (II)-1-(2-Pyridylazo)-2-naphthol	135
Zn (II)-1-(2-Pyridylazo)-2-naphthol	135

Pyrimethamine	109	Sorbitic acid	62,63		
Pyrogallol	131	Sorbitol	21,22		
Pyrroloquinoline quinone (PQQ)	15	Sparteine sulfate	69,70		
Pyruvic acid	58	Stachyose	23		
<b>Q</b>					
Quercetin	73,74	Stevioside	68		
Quercitrin	74	Stigmasterol	87		
Quinidine	69,101,102	G-Strophanthin	70,71,88		
Quinine	69,70	Substance P	44		
8-Quinolinol	135	Succinic acid	58		
<b>R</b>					
Rabbit IgG	54	Sucralose	22		
Raffinose	23	Sucrose	20,22,23		
Rebaudioside A	68	Sulfachloropyridazine	110		
Resibufogenin	89	Sulfadiazine	109,110,111		
Resorcinol	18,117,129	Sulfadimethoxine	109,110		
$\alpha$ -Resorcyclic acid	129	Sulfadimidine	109,110,111		
$\beta$ -Resorcyclic acid	129	Sulfadoxine	110		
$\gamma$ -Resorcyclic acid	129	Sulfaguanidine	109,110		
Retinol	8	Sulfamerazine	109,110,111		
Retinol acetate	8	Sulfamethazine	109,110		
Retinol palmitate	8	Sulfamethizole	109,110		
Rhamnose	20	Sulfamethoxazole	110,111		
Ribitol	21	Sulfamethoxypyridazine	109,110		
Riboflavin	13,14,15,16,17,18	Sulfamonomethoxine	109,110,111		
Ribonuclease A	50,51	Sulfanilamide	109,110		
Rose Bengale	66	Sulfapyridine	109,110		
Rutin	74	Sulfaquinoxaline	109,110		
<b>S</b>					
Saccharin sodium	62,90	Sulfathiazole	109,110,111		
Saikosaponin $\alpha$	72	Sulfisomidine	109,110		
Saikosaponin $b_2$	72	Sulfisoxazole	110		
Saikosaponin c	72	Sulindac	96		
Saikosaponin d	72	Sunset Yellow FCF	66		
Salicin	70,71	Swept	124		
Salicylic acid	61,62,105,129	<b>T</b>			
Saponin	72	Tartaric acid	58		
Scetyl-CoA	18	Tartrazine	66		
Scopolamine bromide	69,70	Taurine	41,42		
Sebutylazaine	122,123	5'-TDP	35		
Sennoside A	76,77	Terbumeton	122,123		
Sennoside B	76,77	Terbutylazine	122,123		
Serine	41	Terbutryn	122,123		
L-Serine	41,42	Terephthalic acid	131		
Siduron	121	$\alpha$ -Terphenyl	134		
Simazine	122,123	$m$ -Terphenyl	134		
Simeconazole	121	$p$ -Terphenyl	134		
Sinapic acid	61,62	Testosterone	84,85		
$\beta$ -Sitosterol	87	Testosterone enanthate	84,85		
Sodium decylbenzenesulfonate	125,126	Testosterone propionate	84,85		
Sodium dodecylbenzenesulfonate	125,126	Tetracaine hydrochloride	102		
Sodium tetradecylbenzenesulfonate	125,126	Tetracycline hydrochloride	111,119		
Sodium tridecylbenzenesulfonate	125,126	Tetrahydrozoline	93		
Sodium undecylbenzenesulfonate	125,126	Theobromine	70,107		

Thiamphenicol	109
Thiophanate-methyl	121
Thioridazine hydrochloride	98
Thiram	121,122
Threonine	41
L-Threonine	41,42
Δ-Threonine	41
Thymidine	34,35
Thymine	34
5'-TMP	35,36
α-Tocopherol	8,10,11,12
β-Tocopherol	10,11,12
γ-Tocopherol	10,11,12
δ-Tocopherol	8,10,11,12
α-Tocopherol acetate	8,12
Tolmetin sodium	96
p-Tolualdehyde 2,4-DNPH	127,128
Transferrin	52,53
Trehalose	22
Triacylglycerol	59
Triamcinolone	81
Triamcinolone acetonide	80,81,82
2,4,6-Trichlorophenol	132
Triethanolamine	135
Trifluoperazine hydrochloride	98
2,2,2-Trifluoro-1-(9-anthryl) ethanol	137
Triglycine	42
Trigonelline	70
2,4,5-Trihydroxybutyrophonenone (THBP)	64,65
Trimethoprim	109,110
o-Trimethyl-β-cyclodextrin	28
2,4,6-Trinitrophenol	132
Triphenylene	128
Triton X-100	126
Trogar's base	142
Trypsin inhibitor (soybean)	52
Trptophan	41
L-Tryptophan	41
5'-TTP	35
Tyrosine	41
L-Tyrosine	41,42

**U**

5'-UDP	35
UDP-N-acetyl-D-glucosamine	36,37
UDP-D-glucose	36,37
5'-UMP	35,36
Uracil	34,35,103,105,135
Urea	17,136
Uric acid	53,106,107,108
Uridine	34,35
5'-UTP	35

**V**

n-Valeraldehyde 2,4-DNPH	127,128
Valine	41
L-Valine	41,42

Vancomycin hydrochloride	120
Vanillic acid	61,62
[Arg <sup>8</sup> ]-Vasopressin	45
Verapamil hydrochloride	100,101,102
Vitamin A	8
Vitamin A palmitate	8
Vitamin B <sub>1</sub>	13,14,17,90
Vitamin B <sub>2</sub> (Flavin mononucleotide)	13,14,18
Vitamin B <sub>2</sub> (Riboflavin)	13,14,15,16,17,18
Vitamin B <sub>6</sub> (Pyridoxal hydrochloride)	16,17
Vitamin B <sub>6</sub> (Pyridoxine hydrochloride)	13,14,15,16,17,95
Vitamin B <sub>12</sub>	13,14,15,16
Vitamin B <sub>13</sub>	15,35
Vitamin C	13,15,16,17,19,90
Vitamin D <sub>2</sub>	8,9,10
Vitamin D <sub>3</sub>	8,9,10
Vitamin E	8
Vitamin H	14,15
Vitamin K <sub>1</sub>	8,12
Vitamin K <sub>2</sub>	8,12
Vitamin K <sub>3</sub>	8

**X**

Xanthine	16,34,106,107
Xanthosine	34,35
Xylitol	21,22
Xylose	20