

PRESS RELEASE

Leading CMO purchases GMP scale multi-column units with YMC's MCSGP continuous chromatography technology.

- Continuous chromatography technology now planned for manufacturing suites to give CMO competitive edge with new therapies at attractive cost point
- Multiple production scale units purchased

Devens, MA USA; - August, 2020

YMC will ship the first GMP scale twin-column HPLC systems enabled with the patented MCSGP (multi-column counter-current solvent gradient purification) process to a leading CMO. These first of a kind units leverage the intellectual property developed by YMC's ChromaCon division. The process has been proven through rigorous user studies at bench scale on multiple <u>peptides</u>, <u>oligos</u> and other difficult ternary separations. The units are also designed to perform conventional single-column batch processes.

The automatic internal recycling of impure side fractions maintains the high product purity while capturing a much greater percentage of valuable product from a feed solution. A 30-60% gain in yield while reducing solvent consumption up to 70% is projected by using the proprietary continuous chromatographic process that can operate without interruption for days resulting in significant throughput gains. Operating with two identical columns, <u>MCSGP</u> is the simplest multi-column HPLC technology available for center cut purifications with linear solvent gradient capabilities.

"The adoption of YMC's twin-column technology by yet another GMP manufacturer signals that this emerging technology is now recognized for its ability to significantly save time in production while increasing yields and productivity." says Mark Dyment, CEO of YMC Process Technologies division. "The technology patented by ChromaCon - a YMC subsidiary - is a crucial step to extending the gains of the continuous chromatographic processes to the manufacturing suite. The CMO will gain substantial leverage with their customers seeking to produce new therapies faster and at cost effective quantities. A further attractive benefit to the CMO and their customers is reducing environmental concerns by using far less solvents during the MCSGP based purification step."



Enabled with the patented <u>MCSGP technology a YMC Contichrom TWIN HPLC</u> system also allows tremendous economic benefits to the emerging DNA / RNA based drugs and vaccines as indicated in recent studies at the bench scale. The <u>FDA recently purchased the technology</u> at bench scale for its further evaluation. While recording tremendous gains in productivity, solvent savings and yield, the technology maintains the purity profile required by the user. The system features linear solvent gradients.

The units are under manufacture at YMC's Center of Excellence for GMP scale in Devens, MA USA where similar units are designed and produced within a platform of low and high pressure twin-column chromatography systems. Earlier this year to company made available a full scale twin-column HPLC GMP pilot unit and has produced <u>multiple twin-column low pressure units</u> used in clinical production of mAb based therapies at leading biopharmaceutical firms.

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About YMC Ltd.



YMC is a private Life Science company headquartered in Kyoto, Japan. Founded in 1980, company has affiliates and facilities throughout Asia, Europe and America. The over 500 employees are providing best-in-class lab and process solutions to the bio/pharmaceutical industry. YMC focus is in the innovation, production and sales of packing materials, packed columns and systems for High Performance Liquid Chromatography (HPLC), Low Pressure Liquid Chromatography (LPLC) and custom purification and custom synthesis. YMC operates a CMO facility and has recently opened a new lab / pilot facility "Kyoto Works" incorporating state of the art multi-column purification. YMC Process Technologies (YPT), Devens, MA USA (formerly LEWA-Nikkiso Bioprocess Systems' Group) has supplied GMP scale downstream process system for nearly 20 years. Acquired by YMC in December 2018, YPT Bio/Pharma Systems Group along with its sister affiliate YMC ChromaCon AG, is a leading supplier of lab and production scale single and multi-column chromatography systems with a deep portfolio of patents. YMC's intellectual assets and know-how cultivated from many years of experience, will continue to push the limits to create a prosperous future for the purification and discovery of small and large molecule therapies. More at: http://www.ymc.co.jp/en/

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Photo:

Contichrom TWIN HPLC 100 enabled with MCSGP technology shown below is a smaller scale version of the units under order described in the accompanying press release.



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