



PRESS RELEASE

YMC marks one-year anniversary of research lab by adding newest continuous technology at large scale.

- **GMP scale system enables advanced purification of peptides, oligos, RNA and dsDNA based therapies and vaccines on continuous basis.**

Kyoto, Japan; Devens, MA USA; - December, 2020

A state-of-the-art lab with a focus on developing continuous purification technologies that was inaugurated in November 2019 will be home to the first-of-a-kind continuous HPLC. Named “Kyoto Works”, the 2,600m² facility is owned by YMC in Fukuchiyama, near Kyoto, Japan. The lab is now readying to accept a production scale Contichrom TWIN 300 HPLC enabled with the patented multi-column countercurrent solvent gradient purification (MCSGP) technology. This twin-column HPLC system is the largest of its kind in the world and will be available for customer use as well as in-house development work. It joins the multiple Contichrom CUBE bench top units, which have the MCSGP functionality, already in use at the Kyoto Works facility. Uniquely, the unit is engineered to operate both as an HPLC designed to 100 bar as well as perform LPLC tasks such as ion exchange chromatography. A smaller scale pilot GMP unit is available in the USA.

Using the proprietary semi-continuous chromatographic process of MCSGP users report 30-60% gains in yield while reducing solvent consumption up to 70% during purification of peptides and oligos. The MCSGP process works by automatically alternating the feeding of one of two identical columns while eluting the other column. The automatic internal recycling maintains the high product purity while purifying a much greater percentage of valuable product from a feed solution.

In its inaugural year, the YMC Kyoto Works lab is operating in the Phase I of a multiple phase roll out of capabilities. In Phase 1 the facility has lab to mid capacity DAC (dynamic axial compression) column manufacturing (300~600 ϕ) and houses three (3) Contichrom CUBE instruments, an EcoPrime six (6) column simulated moving bed (SMB) HPLC, an SMB lab instrument, a Contichrom TWIN CaptureSMB 100 GMP scale LPLC and a 1000 ϕ DAC system.

More information for press members:
8 Charlestown Street, Devens, MA 01434 USA
Phone: +978-487-1107
E-mail: ggach@ymcpt.com
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The TWIN MCSGP unit adds its 0.3 to 3.3 LPM capacity to the already impressive array of technologies available in the YMC Kyoto Works. Phase II of Kyoto Works lab will see up to 200 employees with manufacturing capacity and an additional building (explosion proof / GMP) is planned for completion in 2021 on the 52,000 m² of YMC owned land.

“The addition of another of YMC’s patented twin-column technology to our Kyoto Works facility at the GMP scale signals further commitment to enabling our customers access to continuous purification of vaccines and therapies.” says Ryuji Yamamura, CEO of YMC. *“Since the acquisition of ChromaCon AG in 2019, YMC has quickly brought the technology of continuous chromatographic processes to market at production scale through internally funded investment. YMC’s commitment to bring this scale to industrial manufacturing processes is core to our mission and continues our heritage as a pioneer in chromatography. The user of such systems will gain substantial leverage in producing new therapies at cost effective quantities. Further, the owners will be reducing environmental concerns by using far less solvents - an attractive benefit in the reduction of greenhouse gases.”*

Recently the USA’s FDA acquired YMC’s twin-column technology for evaluation and a major GMP producer in the EU has placed orders for two (2) larger versions of the Contichrom TWIN HPLC MCSGP enabled systems. These units are scheduled for GMP production of peptides and oligo based drugs in early 2021.

The Contichrom TWIN units are manufactured in the USA at YMC’s Center of Excellence for GMP scale systems in Devens, MA where other pilot scale units are available for customer evaluation. Capability to manufacture the same systems is being developed in YMC’s Japan manufacturing sites.

The YMC Contichrom TWIN HPLC system enabled with the [patented MCSGP technology](#) now is seen to have tremendous economic benefits to the emerging DNA / RNA based drugs and vaccines as indicated in recent studies at the bench which has piqued the interest of those working with novel RNA and DNA approaches to COVID vaccines. The rapid uptake of this technology and the additional insights gained at Kyoto Works bodes well for the future of this and other YMC products.

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About YMC Ltd.



YMC is a private Life Science company headquartered in Kyoto, Japan. Founded in 1980, company has over 9 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 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. 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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Photos: 1) Contichrom TWIN HPLC enable MCSGP 100 shown below is a slightly smaller version of the unit to be placed in Kyoto Works described in the accompanying press release. 2) YMC's Kyoto Works facility



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