

# CHIMIA REPORT/COMPANY NEWS

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## Prep for the future!

### New Nexera UC Preparative SFC system/Meets SFC purification needs of the pharmaceutical industry/Pittcon Editors' Gold Award recognizing ingenuity and innovation

Shimadzu, one of the world leaders in analytical instrumentation, has released the Nexera UC Prep, a Preparative Supercritical Fluid Chromatography System. This next-generation prep SFC system provides the pharmaceutical industry with reliable high-performance semi-prep purification. The system has been awarded a Pittcon 2019 Gold Excellence Award, recognizing ingenuity and innovation.

Shimadzu's Semi-Prep SFC is the fruit of a collaborative effort by pharma and private industry, serving as the model for future product design with impact. The company has worked closely together with the Enabling Technologies Consortium (ETC). This group of pharmaceutical and biotechnology companies has allied to speed up the process of creating technologies necessary for their projects. They work with third parties to discuss ideas, share information and collaborate on the development of new enabling technologies.

### Unparalleled performance, unparalleled flexibility

Nexera UC Prep resolves a number of issues in preparative tasks, reducing labor and improving efficiency while fitting into pre-existing workflows. It provides flexible system configurations in a compact design, requiring low installation space and enabling maximum use of lab resources.

The Nexera UC Prep is part of Shimadzu's Nexera UC platform, which accommodates a wide variety of analyses and purifications. A Nexera UC Prep system can be configured according to user specifications for optimum performance of the desired purification function, including chiral or achiral purifications, single injections, stacked injections and fraction collections from several microliters to liters.

This complete SFC solution reduces the need for costly and hazardous solvents used in normal phase prep LC, while shortening purification run time and dry down time. Innovative technologies include a flexible format, combination injector/fraction collector, and CO<sub>2</sub> pump with integrated chiller requiring less lab space, thereby enabling benchtop use.

The novel and patented "LotusStream" gas-liquid separator technology ensures higher recovery and lower carryover than earlier prep SFC systems. Its elegant design reduces the total size of the recovery system and allows for easy rinsing compared to earlier cyclone-style or centrifugal type gas-liquid separating systems.

The newly developed, easy-to-use "Prep Solution" software streamlines operations. It simplifies configuration of parameter settings and greatly increases efficiency of the preparative workflow.

### Cooperation with the ETC; a prep SFC to meet the needs of the pharmaceutical industry

"The Nexera UC Prep system is an improved purification instrumentation that meets the specifications and requirements of SFC users across the pharmaceutical industry" said Mirlinda Biba, PhD, Principal Scientist, Merck & Co. Inc., and ETC lead for this project. "This new generation system provides improved hardware and software features that answer the pharmaceutical industry's demand for an efficient and robust prep SFC system."

"Working with the Enabling Technologies Consortium, and hearing the voice of the pharmaceutical industry, has been an incredibly valuable learning experience for us at Shimadzu," said Patrick Fromal, VP Sales, Shimadzu Scientific Instruments, based in Columbia, Maryland, USA. "Their insight into what's truly needed by the industry drove this project forward, and we are very grateful for the opportunity to work with such an amazing team."

Recognizing that in many companies SFC equipment is aging and many systems are no longer available, the ETC kicked off an initiative in 2015 to develop a new technology. Based on Shimadzu's demonstrated success in the development of analytical and measuring instruments, technical expertise, resources, timeliness and collaborative spirit, ETC selected Shimadzu as its dedicated partner to develop and commercialize this improved SFC system.



New Nexera UC Prep, Preparative Supercritical Fluid Chromatography System

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