

Prep column for HPLC

YMC-Actus ODS series

YMC-Actus series are for preparative HPLC that have excellent durability and efficiency by applying the concept of axial compression technology. YMC-Actus series show higher performance with longer lifetime even under changing the eluent conditions frequently.

Product Name	Inner Diameter (mm)	Length (mm) [guard-cartridge]	Particle (μm)	Pore Size (nm)	Target Compounds	Features
YMC-Actus Triart C18	20 or 30	250 / [10]	5	12	Organic compounds (general)	Hybrid-silica, chemically stable and physically durable material, offers maximum flexibility in separation conditions over a wide pH range (1-12).
YMC-Actus Hydrosphere C18	20 or 30	250 / [10]	5	12	Hydrophilic compounds Nucleic acids	Designed to retain the hydrophilic compounds. Great separation even under 100% water condition.
YMC-Actus Pro C18 RS	20 or 30	250 / [10]	5	8	Structural isomers Analogues	High recognition of stereoselectivity because of high carbon polymeric type bonding. Suitable for structural isomers which are difficult to separate with commercial ODS columns.



* Guard-cartridge is the cartridge typed guard column packed with the same material as main column.

* Please visit our website to find other brands or product information other than those above.

For Normal-Phase Chromatography

Materials for normal-phase mode are effective for the separation of compounds that are difficult to separate in reversed-phase mode.

Product Name	Inner Diameter (mm)	Length (mm) [guard-cartridge]	Particle (μm)	Pore Size (nm)	Target Compounds	Features
YMC-Pack SIL	20 or 30	250 / [10]	5	12	Organic compounds	Standard material for normal-phase mode
YMC-Pack Polyamine II	20 or 30	250 / [10]	5	12	Saccharides	Polyamine bonded material, effective for the separation of saccharides. Longer lifetime compared to conventional silica-based amino columns.
YMC-Pack Diol-NP	20 or 30	250 / [10]	5	12	Vitamins Steroids	Hydroxyl group provides different separation patterns from other NP materials.



* Guard-cartridge is the cartridge typed guard column packed with the same material as main column.

YMC-GPC for Polymers

Gel-permeation chromatography is useful to determine the molecular weight of polymers.

The resolution can be increased by a combination of recycling system.

Product Name	Pore Size (nm)	Column Size	Exclusion Limit (M.W.)	Features
YMC-GPC T2000	5	600x20mmI.D.	2,000	General organic compounds Polymers Oligomers
YMC-GPC T4000	10	600x20mmI.D.	4,000	
YMC-GPC T30000	50	600x20mmI.D.	30,000	
YMC-GPC T60000	100	600x20mmI.D.	60,000	Segmentation of polymers (by M.W.)
YMC-GPC T10M	MIX	600x20mmI.D.	10,000,000	

Guard for YMC-GPC

The guard column helps to protect the main column from damages.

Product Name	Column Size
YMC-GPC-G	75x7.5mmI.D.

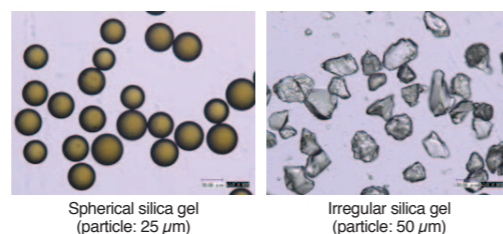
Prep column for MPLC

YMC-DispoPackAT series

YMC-DispoPackAT series are the disposable column packed with 25 μm spherical-gel. (50 μm irregular-gel is also available). Higher pressure stable cartridge (1.38 MPa) enable to increase the flow speed, then, YMC-DispoPackAT can reduce the total separation time. Connection type of inlet is luer-lock, and outlet is for luer-slip type.

Product	Gel Volume (g)	Flow Rate (mL/min)	Sample Load (g)	Mode	Target Sample
SIL-25	12	15	1	Normal-Phase	Low ~ Middle polar
	40	30	3		
NH2-25	12	15	1	Normal-Phase	Middle polar
	40	30	3		
Diol-25	12	15	0.6	Normal-Phase	Middle polar
	40	30	2		
ODS-25	12	15	0.6	Reversed-Phase	Middle ~ High polar
	40	30	2		

* Loading volume of sample in the above table is only as a guide, it mainly depends on the characteristics of samples.



Spherical silica gel (particle: 25 μm)

Irregular silica gel (particle: 50 μm)



Quick-Lock glass column ECO^{PLUS} series

ECO PLUS is self-packing glass column with Quick-lock system which enable to open/reseal the column simply and quickly. Compatible with any packing materials (10 μm or larger particle), and customizable in accordance with the intention. Pressure limit: 4~7 MPa (depending on diameter).

Product	Diameter (mmI.D.)	Pressure (MPa)	Length (mm)		
			125	250	500
TAC15	15	7	(10~13g)	(28~32g)	(58~62g)
TAC25	25	5	(20~24g)	(58~62g)	(118~120g)
TAC35	35	4	(42~46g)	(120~124g)	(238~242g)

* Number shown in parentheses in the above table is the gel weight for packing.

The Only One!



Multiple Preparative HPLC LC-forte/R

Accurate, Agile, and Powerful



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The Only One!



YES, YMC did it !! Accurate, Agile, and Powerful

LC-Forte/R is the world's first preparative system designed for both High-/Low- pressure chromatography. Maximum flow-rate is 50 mL/min with 30 MPa (4,350 psi)!! , supporting recycling function as well as 2-phase gradient operation.

LC-Forte/R is the most ideal preparative HPLC system for purification in the crude stage through to the final stage.

Touch screen controller

Wide touch screen (10.4 inch) is simple to navigate and control for operation. Chromatograms can be displayed on the screen by the pre-installed software.



Pump

Side-motor typed pump, newly developed by YMC, provides the stability for pumping performance and the durability for high pressure (up to 30 MPa).

Therefore, LC-Forte/R is compatible with HPLC prep-size columns.



Injection

Two injectors are included as standard. The manual injector (by syringe) is for small-scale injection, and the suction injector is effective for volume injection, especially for continuous injection with accuracy.

Gradient mode

By applying the function of suction injector and enhanced valve, LC-Forte/R can be used not only as the recycling system, but also as the gradient mode in both MPLC & HPLC.

*) Please try a free YMC-DispoPack accompanied by LC-Forte/R.

Compact & sophistication

All functions necessary for preparative chromatography, like recycling, auto injection, auto replay, automatic flushing, 4 chromatograms simultaneous display and PC control (option) are put into compact body.

*) LC-Forte/R (PC control version) will be able to be controlled by the app of Android™ device. (The control app for Android™ will be released soon.)

Easy maintenance

LC-Forte/R is designed for ease of maintenance. All equipments that require regular maintenance like pump and detector can be pulled out anteriorly. Therefore the maintenance work can be done at the front side without moving the system.

Detector monitorable triple wavelengths (flexible)

A variable wavelength UV detector (YUV-3400), newly designed and installed to LC-Forte/R, expands the range of choices without regard to the compatibility with column and eluent condition.

The sample is detected reliably in combination with refractive index (RI) detector.

*) YUV-3400 is interchangeable with other detectors like YUR-2540 (fixed-UV + RI), YUR-8800 (RI) (specifications are on p.3).



YUV-3400



YUR-2540



YRI-8800

PC Control & Software

Operation by PC is available as option. Along with the operation via monitor on system, the dedicated program is able not only to control the system, but also to analyze the chromatogram data and to operate automatic purification.

*) The operation by PC will be controllable by the app of Android™ device. (The app will be released soon.)

Expansion

YMC offers a wide range of systems from the lab-scale to the production-scale purification in the field of foods, chemicals and pharmaceuticals.

Multi Prep HPLC Specifications of LC-Forte/R

LC-Forte/R is the world's first high pressured recycling system for preparative chromatography, as well as for middle-pressured purification. *) patent pending

FUNCTION	SPECIFICATION
LCD touch screen (on main body)	10.4 inch OS: Windows Embedded Standard 2009
Control	LCD touch screen or interlinked PC
Stacking injection	Suctioned by pump
Manual injection	By accompanying injector loop (10mL as standard)
Manual / Auto mode	Operation for injection, recycle and fraction
Autoreplay	Log-expanding auto separation method
Cleanup	Auto-flushing for flow line, column-flushing
Recycle	By switching of electromagnetic-valve
(MPLC) simplified gradient operation	Low-pressured gradient system
(MPLC) control for gradient rate	By dedicated software (installed as standard)
PC control (* option)	By dedicated software, with LAN connection
Event marking	Any events (start, inject, fraction, etc.)
Timer for pump	Automatically start/stop at the input time
Display for chromatogram	On LCD or on monitor of interlinked PC
Storage of operation data	On flash device or interlinked PC
Signal output	Possible (analog signal)
LAN port	1
Sensor for leaking	Mounted
Column holder	Installed as standard
Dimension	500 (W) x 500 (D) x 400 (H) (mm)
Power supply	AC100 ~ 240 V
Power consumption	400 W
Weight	Approx. 35 kg
FUNCTION of PUMPING	SPECIFICATION
Maximum flow rate	50.0 mL/min
Minimum flow rate	0.1 mL/min
Accuracy of flow rate	+/- 2% (over 5 mL/min)
Maximum discharge pressure	30 MPa
Pressure limiting function	Available (lower and upper)
Pump type	Side-motor double plunger
Motor for pump drive	AC servomotor
Wetted parts	SUS-316, Zirconia, PTFE, Ruby, Sapphire
Value of pressure meter	Monitorable on touch screen

For LC-Forte/R Specifications of fraction collector Forte/FR (option)

The fraction collector LC-Forte/FR is improved model for usability, and can be used in a wide range of application of preparative purification.

FUNCTION	SPECIFICATION
Fraction	Replay, manual, peak (controlled by interlinked PC)
Number of fraction	Max. 65 fractions (standard rack: 21 fractions)
Rack size	φ18 x 65, φ40 x 21 (standard), φ105 x 6, customizable for other size
Dimension	300 (W) x 500 (D) x 300 (H) (mm)
Power supply	From system (LC-Forte/R)
Weight	15 kg



Fraction collector Forte/FR

Software for LC-Forte/R Specifications of Forte Separa II (option)

Forte Separa II is newly developed software dedicated for LC-Forte/R. By using interlinked PC, every operation is manageable, all data is compilable (edit/save/load), and the operation is traceable by invoking the log-file.

	SPECIFICATION
OS	Windows XP, Windows 7 (32/64 bit)
Connection	LAN
Operation	Automatic, manual, replay
Program for analyses	Peak process, comparison of chromatograms, calculation for quantity or GPC (M.W.), etc.
Data format	cdf, csv, etc.
Event mark	Recycle, fraction, injection

Specifications of Detector (selectable)

The standard YUV-3400 is downgradable to other detectors in accordance with the intended purpose.

	YUV-3400	YUR-2540		YRI-8830	YRI-8800
	UV	UV	RI	RI	RI
Wavelength	200 ~ 400 nm (3 Wavelengths monitorable)	254 nm (fixed wavelength)	-	-	-
Source of light	D2 lamp	Low pressure mercury lamp	LED	LED	LED
Sensitivity	1.3x10 ⁻⁴ AU	5.0x10 ⁻⁵ AU	1.4x10 ⁻⁶ RIU	1.4x10 ⁻⁶ RIU	1.2x10 ⁻⁹ RIU
Drift	3.0x10 ⁻³ AU/h	7.2x10 ⁻⁴ AU/h	7.9x10 ⁻⁶ RIU/h	7.9x10 ⁻⁶ RIU/h	2.0x10 ⁻⁹ RIU/h
Flow cell	-	-	8 μL	8 μL	8 μL
Max. range	-	-	4x10 ⁻³ RIU	4x10 ⁻³ RIU	2.8x10 ⁻³ RIU
Measuring method	Single-beam transmissive-type	Double-beam intercomparison-type	Particular deflection	Particular deflection	Deflection
Refractive range	-	-	1.00-1.75	1.00-1.75	1.00-1.75
Temp. control	-	-	N/A	N/A	Available (fixed)
Purge process	-	Automatic	Automatic	Automatic	Automatic



An example of purification using a combination of MPLC mode and recycling HPLC mode is shown above. The mixture was fractionated by the difference of hydrophobicity in MPLC (upper chart), and purified by recycling mode with isocratic HPLC condition (lower chart).