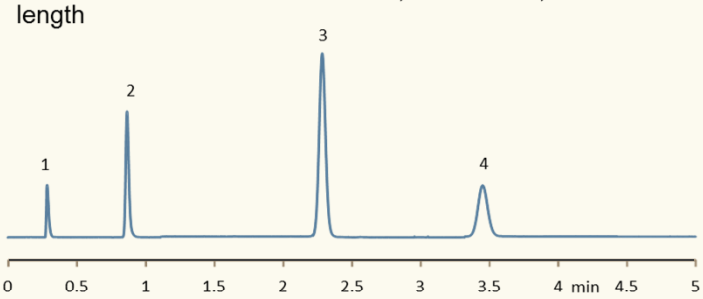
Comparison of MarvelXACT Fitting System
(inner diameter 0.075 mm) and SUS tubing (inner diameter 0.1 mm)

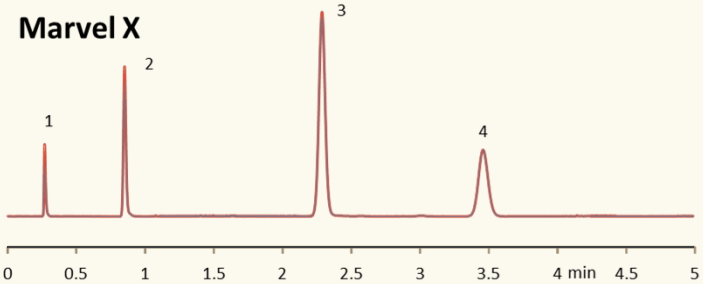
SunShell C18 2.6 µm, 50 x 2.1 mm

SUS 0.1mm

Connecting tube
Injector→Column: SUS, 0.1 mm i.d., 300 mm length
Column→Flow cell of UV: PeekSil, 0.1 mm i.d., 200 mm length



Marvel X



Connecting tube
Injector→Column: Marvel X, 0.075 mm i.d., 350 mm length
Column→Flow cell of UV: Marvel X, 0.075 mm i.d., 150 mm length

Measurement condition

Column:	SunShell C18, 2.6 µm 50 x 2.1 mm
Mobile phase:	Acetonitrile/water=60/40
Flow rate:	0.30 mL/min
Temperature:	RT
Detection:	UV@250 nm
Injection volume:	0.4 µL
Sample:	1=Uracil 2=Ethylbenzene 3=Acenaphthene 4=Butylbenzene

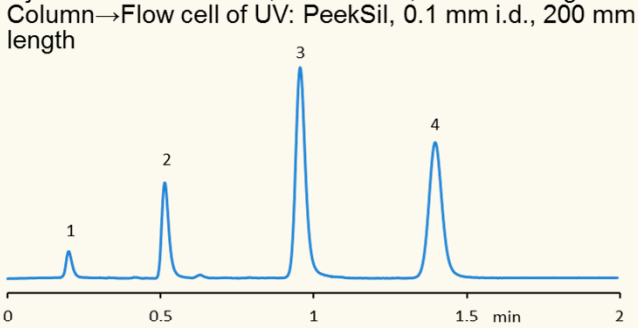
SunShell C18 2.6 µm, 50 x 2.1 mm

	Peak No.	SUS	Marvel X	
Efficiency	1	1107	2614	136% up
	2	6852	10146	48% up
	3	10976	11907	8% up
	4	10768	11129	3% up
Tailing factor	1	0.939	0.913	
	2	1.320	1.210	
	3	1.057	1.037	
	4	1.041	1.051	
Peak width, $h_{0.5}$ (min)	1	0.0201	0.0124	
	2	0.0246	0.0199	
	3	0.0513	0.0493	
	4	0.0783	0.0772	

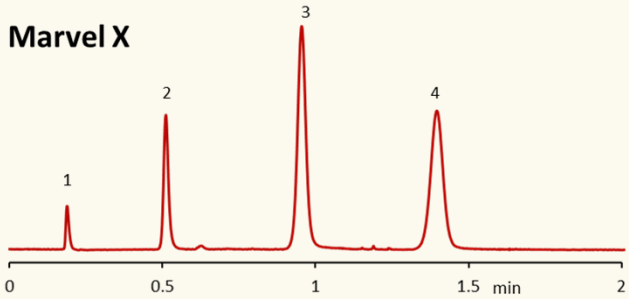
SunShell C8 2.6 µm, 30 x 2.1 mm

SUS 0.1mm

Connecting tube
Injector→Column: SUS, 0.1 mm i.d., 300 mm length
Column→Flow cell of UV: PeekSil, 0.1 mm i.d., 200 mm length



Marvel X



Connecting tube
Injector→Column: Marvel X, 0.075 mm i.d., 350 mm length
Column→Flow cell of UV: Marvel X, 0.075 mm i.d., 150 mm length

Measurement condition

Column:	SunShell C8, 2.6 µm 30 x 2.1 mm
Mobile phase:	Acetonitrile/water=60/40
Flow rate:	0.30 mL/min
Temperature:	RT
Detection:	UV@250 nm
Injection volume:	0.4 µL
Sample:	1=Uracil 2=Ethylbenzene 3=Acenaphthene 4=Butylbenzene

SunShell C8 2.6 µm, 30 x 2.1 mm

	Peak No.	SUS	Marvel X	
Efficiency	1	473	1405	197% up
	2	2395	5245	119% up
	3	4377	6030	38% up
	4	4991	5536	11%up
Tailing factor	1	1.225	1.037	
	2	1.395	1.235	
	3	1.266	1.062	
	4	1.118	1.028	
Peak width, $h_{0.5}$ (min)	1	0.0205	0.0119	
	2	0.0246	0.0166	
	3	0.0338	0.0288	
	4	0.0463	0.0440	