

For HPLC/UHPLC



Develosil[®] FlexFire AQ C18

NOMURA CHEMICAL CO., LTD



Develosil® FlexFire AQ C18

Ideal for holding and separating highly polar compounds!!

It is extremely difficult to retain and separate highly polar compounds in reversed-phase columns. FlexFire AQ C18 was developed to solve this problem. Also, it is possible to use 100% aqueous mobile phase like FlexFire C30.

If you are uncertain about which column to choose, we recommend using this column immediately. It will surely lead to satisfactory results.

Spec of FlexFire AQ C18

	FlexFire AQ C18
Particle size	1.6µm, 2.6µm, 5µm
Chemistry	Octadecyl
Surface area	340m ² /g
Pore volume	1.0mL/g
Pore diameter	11nm
Carbon	8.5%
End-cap	あり
pH	pH1-9
Temperature	~80°C
Max pressure	1.6µm: 800bar (=80Mpa=11,603psi)
	2.6µm: 600bar (=60Mpa=8,702psi)
	5µm: 300bar (=30Mpa=4,351psi)

Conditions;

Column: Develosil FlexFire C18, 1.6µm (2.0x50mm)

Mobile phase: A) 0.05%TEA B) Acetonitrile

Gradient:	min	mL/min	%A	%B	Curve
	0.00	0.5	95	5	
	5.04	0.5	75	25	6
	5.05	0.5	95	5	6

Temperature: 40°C

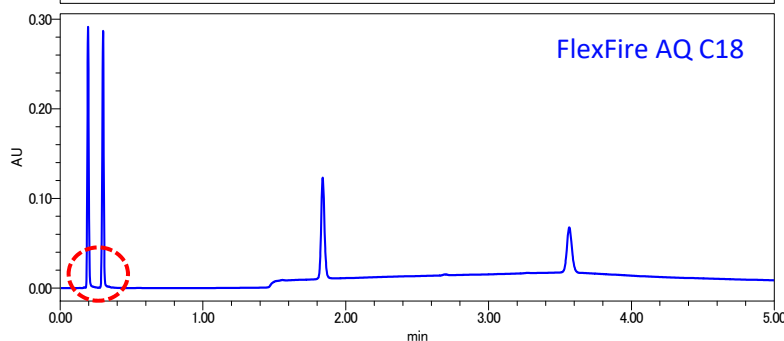
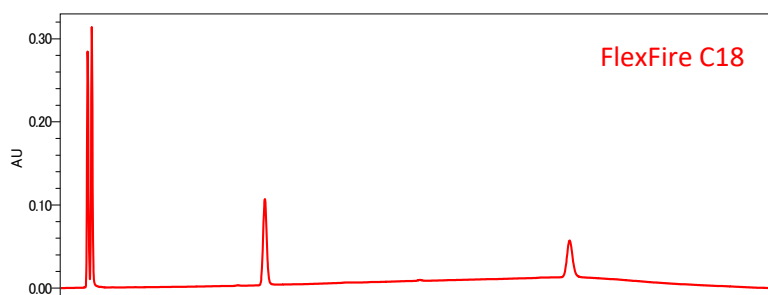
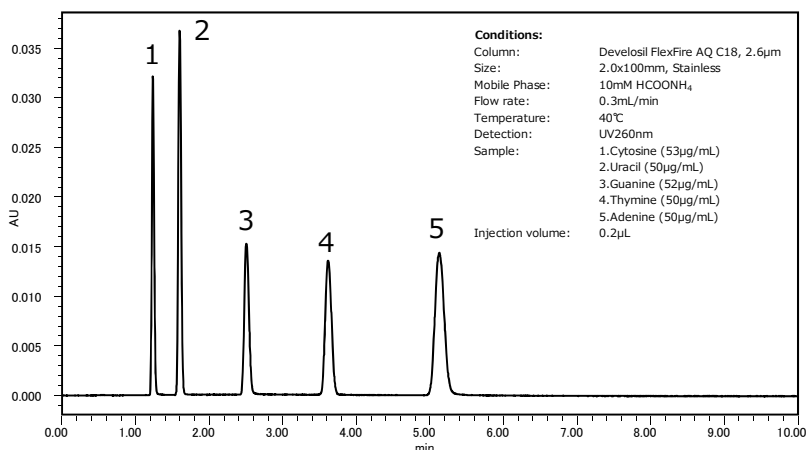
Detection: UV254nm

Sample:
 1. Theophylline (0.13mg/mL)
 2. Theobromine (0.13mg/mL)
 3. Caffeine (0.13mg/mL)
 4. Nicotine (0.13mg/mL)

Injection volume: 0.2µL

System: Waters ACQUITY UPLC H-Class PLUS
 Mixer: 100µL

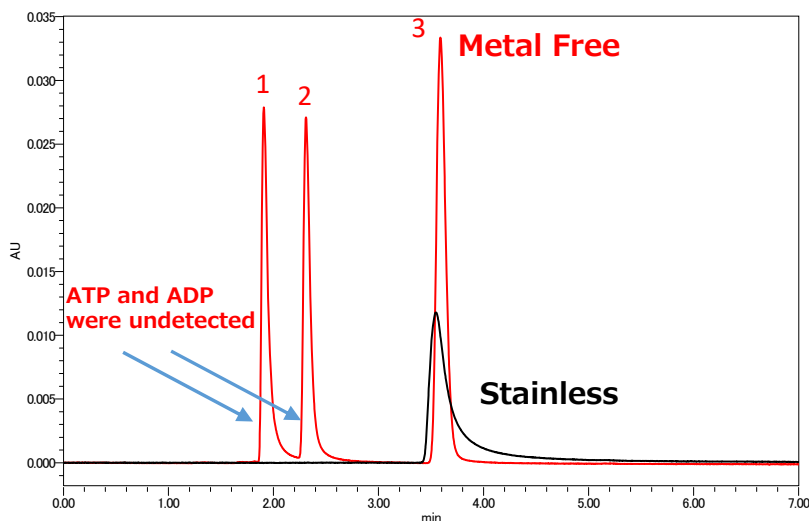
■ Nucleobase analysis using 100% aqueous mobile phase.



■ Retaining and separating compounds eluting to the front

Analysis example of combination of retention of highly polar compounds + metal-free column

● Analysis of ATP, ADP and AMP



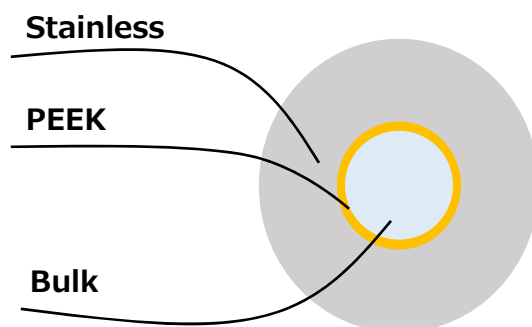
Conditions:
 Column: Develosil FlexFire AQ C18, 2.6 μ m (2.0x100mm) : Stainless
 Develosil FlexFire AQ C18, 2.6 μ m (2.0x100mm) : Metal Free
 Mobile phase: 10mM HCOONH₄
 Flow rate: 0.3mL/min
 Temperature: 40°C
 Detection: UV260nm
 Sample: 1. ATP (0.16mg/mL)
 2. ADP (0.17mg/mL)
 3. AMP (0.16mg/mL)
 Injection volume: 0.2 μ L

A sharp peak can be obtained by using a phosphate buffer for the analysis of compounds containing phosphate groups such as nucleic acids.

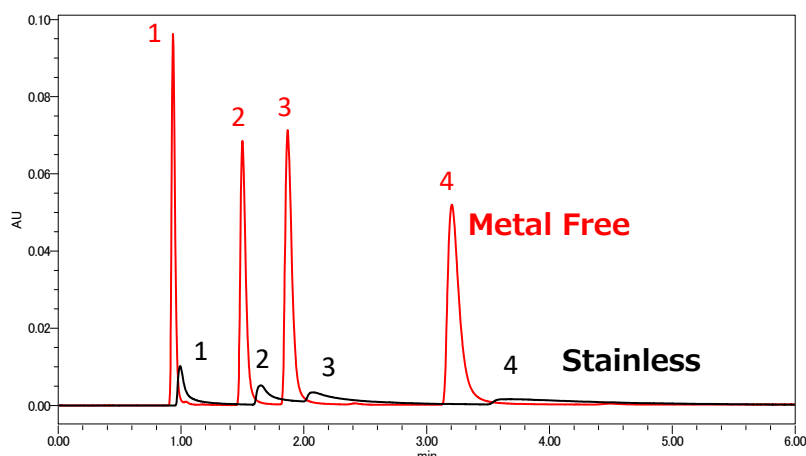
However, this mobile phase cannot be used in LC/MS. When ammonium formate is used as the mobile phase for LC/MS, ATP and ADP are not detected on the stainless steel column, and AMP has a broad peak.

By changing the material of the column to metal-free, sharp peaks can be eluted even in the ammonium formate mobile phase.

Structure of Metal-Free column



● Analysis of dNTP

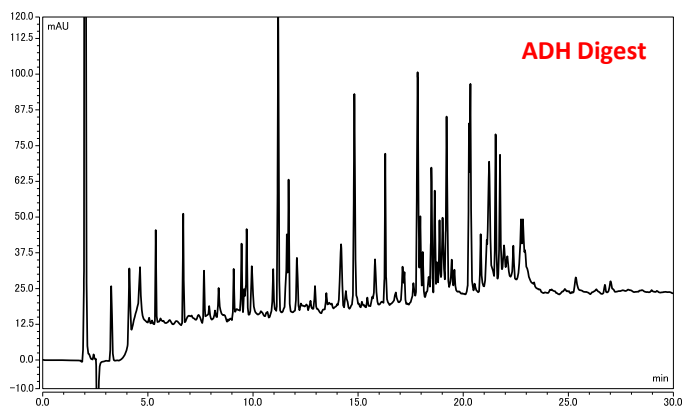


Conditions:
 Column: Develosil FlexFire AQ C18, 2.6 μ m (2.0x100mm) : Stainless
 Develosil FlexFire AQ C18, 2.6 μ m (2.0x100mm) : Metal Free
 Mobile phase: 10mM HCOONH₄
 Flow rate: 0.3mL/min
 Temperature: 40°C
 Detection: UV260nm
 Sample: 1. dCTP (13 μ M)
 2. dTTP (13 μ M)
 3. dGTP (13 μ M)
 4. dATP (13 μ M)
 Injection volume: 0.2 μ L

The Develosil series of metal-free columns have a high pressure resistance by covering the PEEK tube with stainless steel. In addition, since PEEK is used for the frit, it is completely metal-free.

Combined with a bio-inert system, this will lead to more complete data, but keep in mind that the "quality" of the filler is important.

Analysis of digested peptide



Conditions;

Column: FlexFire AQ C18, 2.6 μ m (2.0x250mm)
 Mobile phase: A) Water+0.1%TFA B) Acetonitrile+0.1%TFA

Gradient:

min	mL/min	%A	%B	Curve
0.00	0.3	100	0	
30.0	0.3	50	50	6
30.1	0.3	100	0	6

Temperature: 40°C

Detection: UV210nm

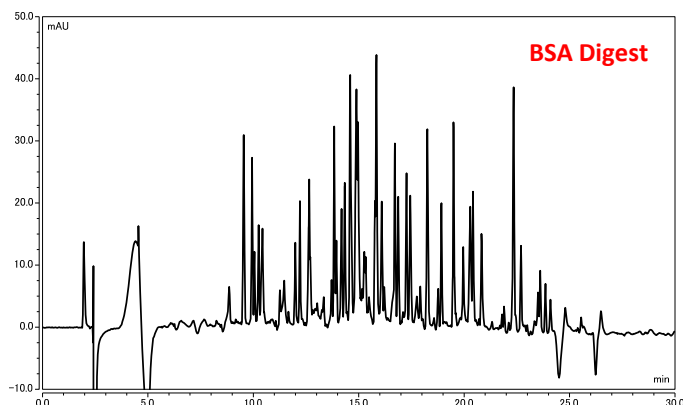
Sample: ADH Digest

BSA Digest

Injection volume: 10 μ L

System: Thermo Fisher SCIENTIFIC Vanquish_H

Mixer: 10 μ L



It has been necessary to spend a lot of time to analyze digested peptides. However, with the advent of UHPLC, this time can be significantly reduced.

The FlexFire series including FFAQ has a lineup of particle diameters of 1.6 μ m/2.6 μ m/5 μ m, and exhibits the best performance in all particle diameters.

Order information

Product	Particle	Size (i.d.XL)	Sutainless	Metal-Free
FlexFire AQ C18	1.6 μ m	2.0x35mm	306-I20035W	306-I20035MFW
		2.0x50mm	306-I20050W	306-I20050MFW
		2.0x75mm	306-I20075W	306-I20075MFW
		2.0x100mm	306-I20100W	306-I20100MFW
		2.0x150mm	306-I20150W	306-I20150MFW
		2.0x250mm	-	-
	2.6 μ m	2.0x35mm	306-L20035W	306-L20035MFW
		2.0x50mm	306-L20050W	306-L20050MFW
		2.0x75mm	306-L20075W	306-L20075MFW
		2.0x100mm	306-L20100W	306-L20100MFW
		2.0x150mm	306-L20150W	306-L20150MFW
		2.0x250mm	306-L20250W	306-L20250MFW
	5 μ m	2.0x35mm	306-520035W	306-520035MFW
		2.0x50mm	306-520050W	306-520050MFW
		2.0x75mm	306-520075W	306-520075MFW
		2.0x100mm	306-520100W	306-520100MFW
		2.0x150mm	306-520150W	306-520150MFW
		2.0x250mm	306-520250W	306-520250MFW

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