

# Peptide Analysis with 1.6 μm Columns

Nomura Chemical and Develosil USA launched the Develosil UHPLC series adopting 1.6 μm particles in October 2018. The newly adopted silica gel base material greatly improves results and provides ultra-high speed separation by using UHPLC, thus shortening analysis time and reducing solvent usage.

In this report, we tried analyzing peptides without using ion pair reagents. The Develosil UHPLC series gives sufficient retention and separation while using ammonium formate for the mobile phase, and it can be expected to produce useful results in LC/MS.

## - Previous peptides analysis conditions -

Column: Develosil HSR AQ C18, 5 μm (4.6 x 150 mm)  
Develosil HSR AQ C18, 2 μm (2.0 x 50 mm)

Mobile phase: A) Water + 0.1% TFA    B) Acetonitrile + 0.1% TFA

Gradient: 5 μm

min	mL/min	%B	Curve
0.00	1.0	0	5
10.0	1.0	25	5
20.0	1.0	25	5
20.1	1.0	0	5

2 μm

min	mL/min	%B	Curve
0.00	0.474	0	5
1.47	0.474	25	5
2.93	0.474	25	5
2.95	0.474	0	5

Temperature: 50°C

Detection: UV230 nm

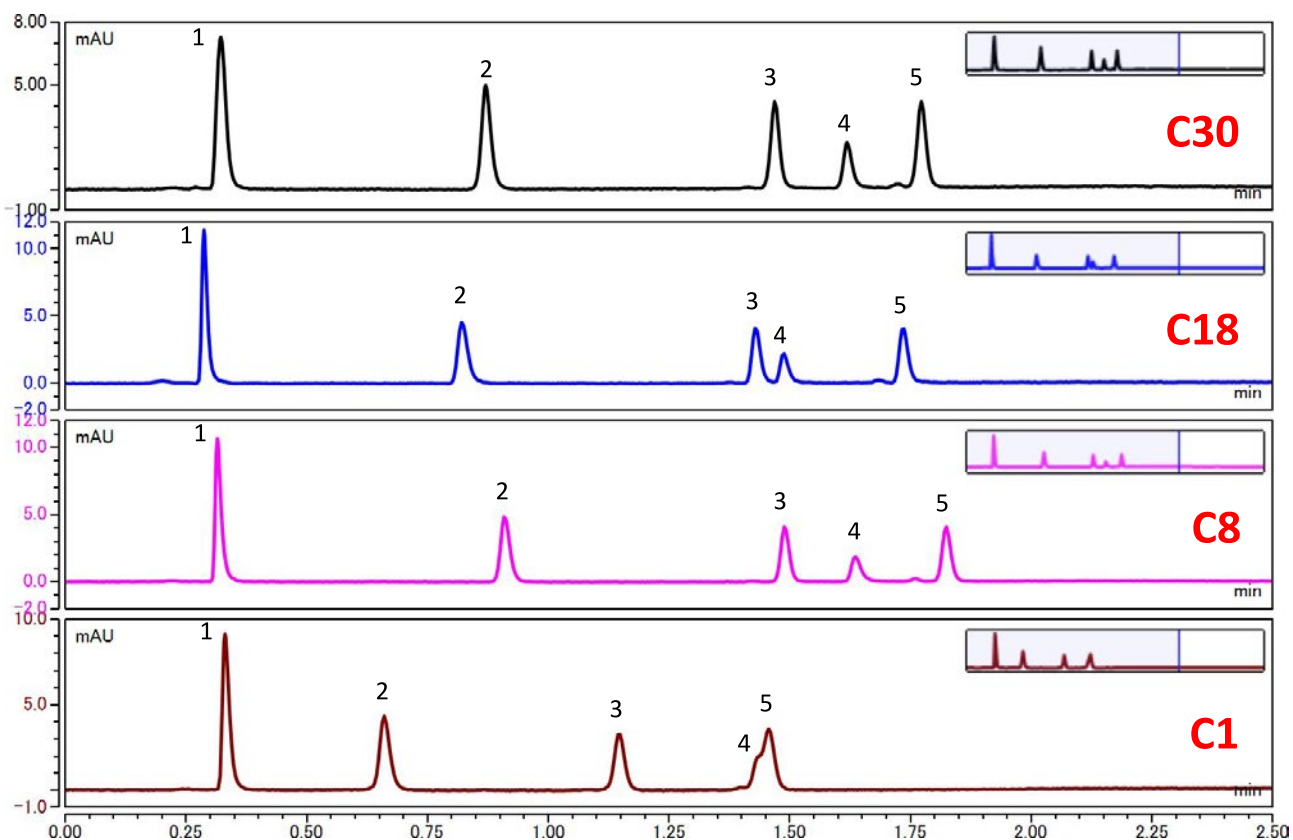
Sample:

1. Gly-Tyr	4. Angiotensin II
2. Val-Tyr-Val	5. Leucine-Enkephalin
3. Methionine-Enkephalin	

System: Thermo Fisher SCIENTIFIC Vanquish\_H

Mixer Volume: 10 μL





This method was able to completely separate the five peptides on the C30, C18, and C8 columns without the use of an ion pairing reagent. While increasing the composition of the organic solvent, analysis time is kept unchanged from that when using 0.1% TFA. This method used ammonium formate, so that it can be directly applied to LC/MS detection instead of UV detection.

In addition, since volatile buffer is used, it greatly contributes to high efficiency of the column. This method used ammonium formate, so that it can be directly applied to LC/MS detection instead of UV detection.

Due to the fast analysis, the sensitivity for these compounds increased about two fold comparing to using 2  $\mu\text{m}$  particle size.

## ■ Order Information

### Develosil UHPLC 1.6 µm Series

Size	C30	C18	C8	C1	HILIC
2.0 x 35 mm	201-I20035W	202-I20035W	203-I20035W	204-I20035W	205-I20035W
2.0 x 50 mm	201-I20050W	202-I20050W	203-I20050W	204-I20050W	205-I20050W
2.0 x 75 mm	201-I20075W	202-I20075W	203-I20075W	204-I20075W	205-I20075W
2.0 x 100 mm	201-I20100W	202-I20100W	203-I20100W	204-I20100W	205-I20100W
2.0 x 150 mm	201-I20150W	202-I20150W	203-I20150W	204-I20150W	205-I20150W

### Develosil UHPLC 1.6 µm Metal-free Series

Size	C30	C18	C8	C1	HILIC
2.0 x 35 mm	201-I20035MFW	202-I20035MFW	203-I20035MFW	204-I20035MFW	205-I20035MFW
2.0 x 50 mm	201-I20050MFW	202-I20050MFW	203-I20050MFW	204-I20050MFW	205-I20050MFW
2.0 x 75 mm	201-I20075MFW	202-I20075MFW	203-I20075MFW	204-I20075MFW	205-I20075MFW
2.0 x 100 mm	201-I20100MFW	202-I20100MFW	203-I20100MFW	204-I20100MFW	205-I20100MFW
2.0 x 150 mm	201-I20150MFW	202-I20150MFW	203-I20150MFW	204-I20150MFW	205-I20150MFW

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DR24-0219