Impact of Column ID on Sensitivity for Peptides and Proteins Using HALO 160 Å ES-C18

301-PR

Legend:
- 2.7µm, 1.5x150mm ES-C18 160Å
- 2.7µm, 2.1x150mm ES-C18 160Å
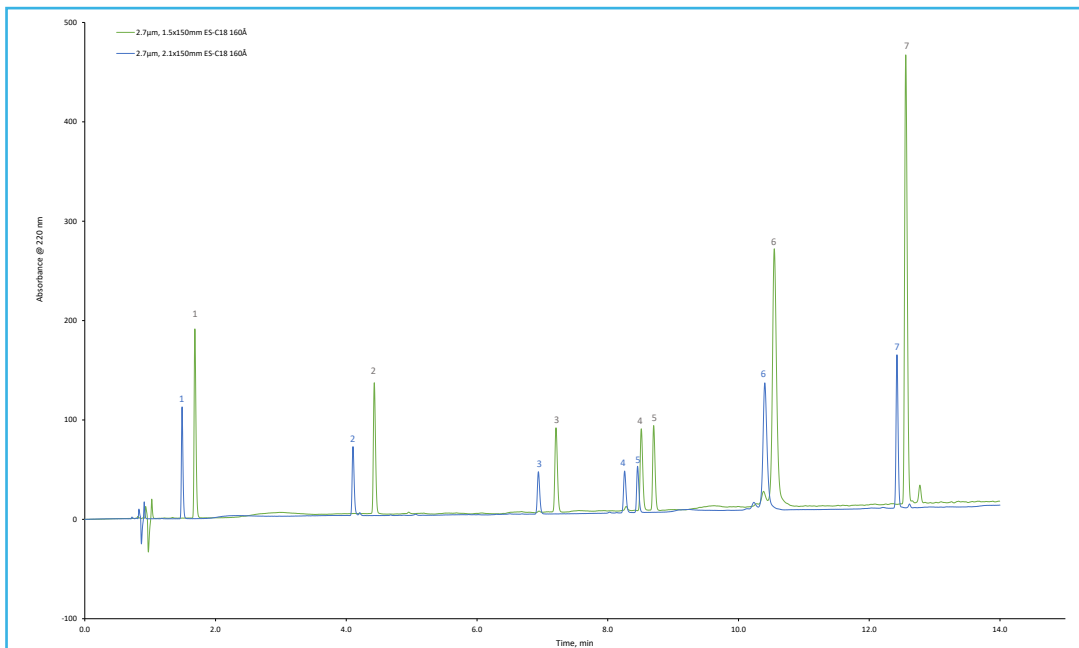
PEAK IDENTITIES:

1. Gly-Tyr
2. Val-Tyr-Val
3. Methionine Enkephalin
4. Angiotensin II
5. Leucine Enkephalin
6. RNase A
7. Insulin

Sensitivity in UV applications can be increased with simple changes in column dimensions. It is known that by switching to smaller ID columns, the response from the UV detector increases. The comparisons above shows the impact of column dimensions on sensitivity for a mix of peptides and small proteins. By reducing the column ID there is a significant increase in sensitivity. Without a sufficiently low dispersion UHPLC, the 1.0mm suffers from broad peaks, causing reduced resolution.

*The 1.5mm column was run on a reduced dispersion system

TEST CONDITIONS:

Column: HALO 160 Å ES-C18, 2.7 µm, 1.5 x 150 mm
Part #: 9212X-702
Column: HALO 160 Å ES-C18, 2.7µm, 2.1 x 150 mm
Part #: 92122-702
Mobile Phase A: 90/10 Water/ACN 0.1% TFA
Mobile Phase B: 70/30 ACN/Water 0.1% TFA

Gradient:

Time (min)	%B
0.0	00
15.0	50
15.1	00
17.0	00

Flow Rate: 0.2 mL/min for 1.5mm
0.4 mL/min for 2.1mm
Pressure: 427 bar/1.5mm
360 bar/2.1mm
Temperature: 30 ⁰C
Detection: UV 220 nm, PDA
Injection Volume: 1.0 µL
Sample Solvent: Water
Data Rate: 100 Hz
Response Time: 0.025 sec.
Flow Cell: 1µL
Instrument: Shimadzu Nexera X2

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PERFORMANCE YOU CAN RELY ON**

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