HALO®

CLINICAL / TOXICOLOGY

Nicotine Metabolite Comparison of 1.5 mm to 2.1 mm ID Column using HILIC Separation Mode

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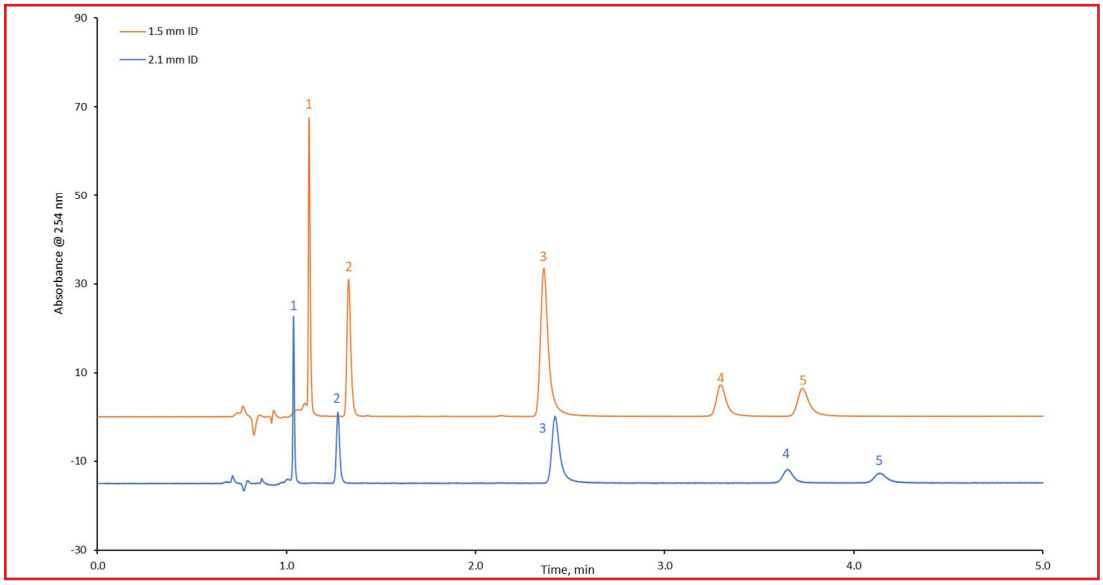

TEST CONDITIONS:

Column: HALO 90 Å Penta HILIC, 2.7 µm 1.5 x 150 mm
Part Number: 9281X-705
Column: HALO 90 Å Penta HILIC, 2.7 µm 2.1 x 150 mm
Part Number: 92812-705
Isocratic: 10/90 20mM Ammonium Formate @ pH=3/ ACN + 0.1% Formic Acid
Flow Rate: 0.4 mL/min
Pressure: 188 Bar - 1.5 mm
73 Bar - 2.1 mm
Temperature: 40 °C
Detection: UV 254 nm, PDA
Injection Volume: 1.0 µL
Sample Solvent: 10/90 Water/ACN
Data Rate: 100 Hz
Response Time: 0.025 sec.
Flow Cell: 1 µL
LC System: Shimadzu Nexera X2

PEAK IDENTITIES

1. Cotinine
2. Trans-3-hydroxycotinine
3. Nicotine
4. Anabasine
5. Nornicotine

Nicotine is a widely known alkaloid found in cigarettes and is highly addictive. In order to break the addiction to nicotine, people must be weaned off the alkaloid slowly to reduce the side effects of withdrawal. This requires monitoring of nicotine and its metabolites as well. Due to the basic nature of nicotine, it is difficult to separate under reversed phase conditions. By running the samples under HILIC conditions, there is sufficient retention for each chemical to be separated completely. In the above chromatogram a comparison of the 1.5 and 2.1mm ID's is shown. The HALO® 1.5 mm ID Penta-HILIC column produces a similar separation but with increased peak heights and increased area counts for the same injection volume of sample. When working with clinical samples that can be low in abundance, a 1.5 mm ID column can produce a lower LOD for problematic samples.

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