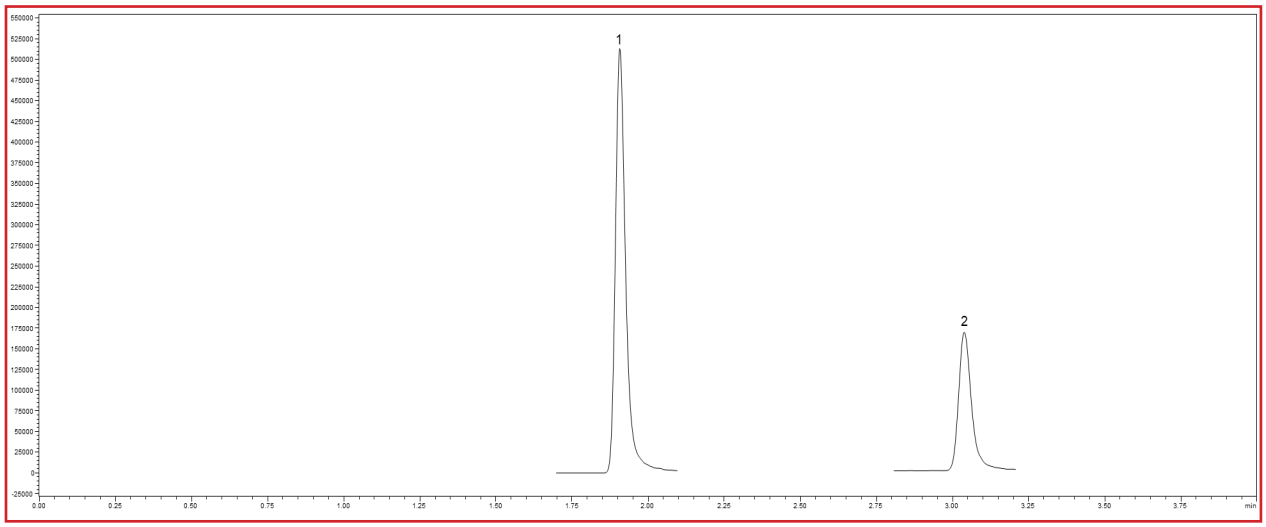
HALO®

CLINICAL / TOXICOLOGY

Increased Efficiency of EtG/EtS with 2µm HALO® PCS C18

412



TEST CONDITIONS:

Column: HALO 90 Å PCS C18, 2.0 µm, 2.1 x 150mm
Part Number: 91882-717
Column: HALO 90 Å PCS C18, 2.7 µm, 2.1 x 150 mm
Part Number: 92812-717
Mobile Phase A: 0.1% Formic Acid in Water, pH- 2.8
Mobile Phase B: 0.1% Formic Acid in Methanol
Isocratic: 3 %B
Flow Rate: 0.4 mL/min
Back Pressure: 2.0 µm - 640 bar
2.7 µm - 360 bar
Temperature: 30 °C
Injection: 1µL (125ng/mL EtS, 2.5µg/mL EtG)
Sample Solvent: H_20
LC System: Shimadzu Nexera X2
MS System: Shimadzu 8060nx Triple Quad

MS Conditions:

Polarity: Negative mode
Nebulizing Flow: 3 L/min
Heating Gas Flow: 15 L/min
Interface Temperature: 400 °C
Desolvation Temperature: 650 °C
Drying Gas Flow: 3 L/min
DL Temperature: 250 °C
Heat Block Temperature: 400 °C

PEAK IDENTITIES

1. EtG
2. EtS

Name	Collision energy (eV)	Precursor *m/z*	Product *m/z*
EtS	20	125.1	97
	40		80
EtG	16	221.1	75
	20		85

This application note explores the isocratic separation of ethanol metabolites, ethyl glucuronide (EtG) and ethyl sulphate (EtS), under formic acid conditions with mass spectrometry detection. The separation is performed on a positively charged (PCS) C18 stationary phase, which provides strong retention for EtS compared to non-charged alternatives, helping move EtS further from the column's void volume. This improved retention is key for reducing matrix effects that often occur when analytes elute too early. This study compares two particle sizes: 2.0 µm and 2.7 µm. The 2.0 µm PCS C18 column delivers higher peak capacity, offering sharper resolution and better separation efficiency for EtG and EtS. These performance gains are especially valuable for complex samples where minimizing interference is critical. This application demonstrates how particle size selection can significantly impact metabolite analysis. The HALO® PCS C18 phase, particularly in its 2.0 µm format, provides a practical advantage for achieving robust retention and improved chromatographic performance.