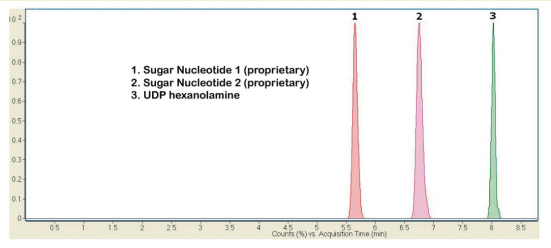
Sugar Nucleotides

Separating UDP and CDP Sugars



Notes: Sugar nucleotides among other metabolites are an important group of compounds to be analyzed when one is trying to understand cellular response to genetic or environmental perturbations.
The combination of ANP chromatography and electrospray quadrupole ion-trap mass spectrometry is a powerful tool for profiling sugar nucleotides in metabolomic studies. The mobile phase used in the application is high in organic component which enhances MS response and assures low detection limits.

Method Conditions

Column: **Cogent Diamond Hydride™**, 4µm, 100Å

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150 mm

Solvents: A: DI H_2O/ 0.1% ammonium formate (pH 7.2)
B: 90% Acetonitrile/ 10% DI H_2O/ 0.1% ammonium formate (pH 6)

Gradient:

time (min.)	%B
0	95
10	75
12	75
12.1	95
15	95

Post Time: 5 min

Flow rate: 0.3 mL/min

Detection: ESI – neg – Agilent 6410 Triple Quadrupole LC/MS

Compounds: 1. Compound 1 - the monitored MRM transitions were m/z 535 to m/z 323
2. Compound 2 - the monitored MRM transitions were m/z 564 to m/z 322
3. UDP hexanolamine (internal standard) - the monitored MRM transitions were m/z 502 to m/z 258
(MRM - multiple reaction monitoring in LC/MS/MS)

Discussion

The Aqueous Normal Phase (ANP) inverse gradient method shown above was used to analyze UDP and CDP sugars with UDP hexanolamine as an internal standard. Solutes presented in this note are a mixture of compounds that occur in plants.

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