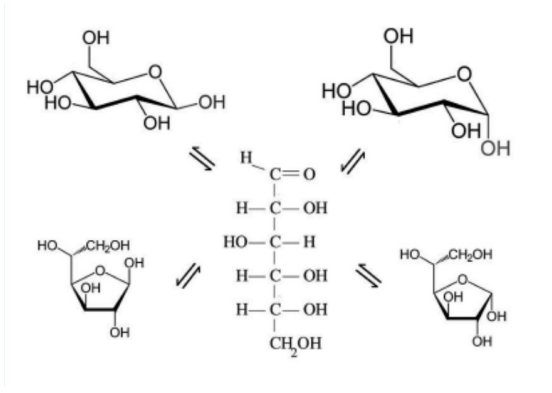
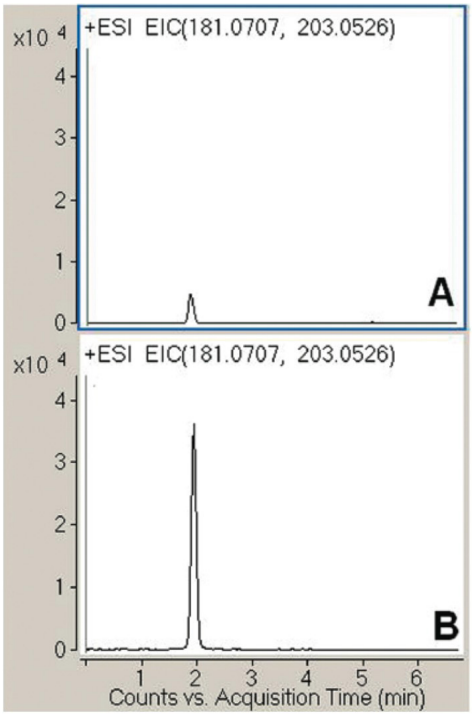
Ionization Effect of microM Addition of Sodium Acetate

Monosaccharide - Glucose retention in the ANP mode





Note: This method may be useful for determination of monosaccharides in blood. Samples used are un-derivatized with detection possible with mass spectrometry. Biological sample preparation is simple, generally focused on the removal of proteins and other high molecular weight components of plasma, urine and saliva.

Method Conditions

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

Catalog No.: 70000-15P-2

Dimensions: 2.1 x150 mm

Solvents: **Chromatogram A:**
A: 80% DI H_2O/ 20% methanol/ 0.1% formic acid
B: 100% acetonitrile + 0.2% acetic acid

Chromatogram B:
A: 80% DI H_2O/ 20% methanol/ 0.1% formic acid
B: 100% acetonitrile + 0.2% acetic acid
ATTENTION: Sodium Acetate concentration is in microM. Higher concentration is harmful for MS.

Gradient:

time (min.)	%B
0	100
1	100
4	50
7	50
8	100

Post Time: 5 min

Injection vol.: 1µL

Flow rate: 0.600 mL/min

Detection: ESI – pos - Agilent 6210 MSD TOF mass spectrometer

Sample: Glucose 10 ppm, m/z 203.0526 $(M+Na)^+$

Discussion

Glucose, a simple monosaccharide, was analyzed by LC-MS and the peak is very symmetrical and easy to integrate. This application note illustrates the importance of addition of microM amount of sodium to the mobile phase when sugars are analyzed. Sodium adducts of sugars produce much better signal in LC-MS analysis (at least 10 times higher signal for the same sample) – see chromatograms A and B. When glass bottles are used there is enough sodium leaching from the glass that it is possible to find very strong signals for the sodium adduct.

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