Centre for Organismal Studies
University of Heidelberg
Im Neuenheimer Feld 360
69120 Heidelberg
Germany

ANALYSIS OF CARBOHYDRATES (SUGARS)

Description: Ion Chromatography method for the detection of carbohydrates.

Samples are extracted in 80% ethanol at 80°C. Carbohydrates are separated by Ion Chromatography using an CarboPac PA1 2mm-column connected to an ICS-5000 system (ThermoScientific) in an 15-300 mM NaOH gradient, and quantified by pulsed amperometric detection (HPAEC-PAD). Data acquisition and quantification was performed with Chromeleon 7 software.

Container: cell pellets, plasma/serum, ground tissue (1.5 mL screw-cap Eppendorf tube)

Optimal Volume/Amount: plasma/serum (50 µl); Tissue (25-50 mg)[1]; Cells (6-10 Mio)[2].

Sample Collection: Please see our detailed sample collection protocols.

Quantification: Calibration is provided by external standard mixes (see list below)

List of detectable compounds

Carbohydrates
Inosit
Mannit
Sorbitol
Trehalose
Fucose
Arabinose
Galactose[a]
Glucose[b]
Mannose[c]
Fructose
Sucrose
Lactose
Raffinose
Maltose

[a,b,c] cannot be completely separated

[1] pulverized/crushed (deep-frozen) in 1.5 mL safe-lock Eppendorf tube; note exact weight in iLab
[2] required cell number largely depends on cell size (e.g. 6 Mio. for HELA or HEK cells; 10 Mio. for T-cells)