

ANALYSIS OF ANIONS AND ORGANIC ACIDS

Description: Ion Chromatography method for the detection of anions and organic acids.

Samples are extracted in hot water. Anions and Organic acids are separated by Ion Chromatography using an IonPac AS11-HC 2mm-column connected to an ICS-5000 system (ThermoScientific) in an 4-80 mM NaOH gradient, and quantified by conductivity detection after cation suppression.

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

Anion/Organic Acid		MW (g/mol)
Fluorid	Fl	19.00
Chloride	Chl	35.45
Nitrite	Niti	46.00
Acetate	Ace	60.05
Nitrate	Nita	62.00
Pyruvate	Pyr	88.06
Oxalate	Ox	90.04
Lactate	Lac	90.08
Phosphate	Phos	94.97
Sulfate	Sul	96.06
Fumarate ^a	Fum	116.07
Oxaloacetate ^a	Oxa	132.07
Succinate ^b	Succ	118.09
Malate ^b	Mal	134.09
Tartrate	Tar	150.09
Citrate	Cit	192.12
Isocitrate	Isocit	192.12

^{a,b} cannot be 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)