

## Info Sheet: Amino Acid Analysis

Amino acid analysis provides detailed information about the amino acid composition and concentration of protein/peptide hydrolysates and of free amino acids in cell culture media, biofluids and intracellular.

### Amino acid analysis

#### General description:

The workflow consists of:

- Protein/peptide hydrolysis
- Reaction with AccqTag (Aminoquinolyl-N-hydroxysuccinimidyl carbamate, Waters)
- AccqTag-Ultra UPLC reversed-phase separation of the amino acid derivatives
- UV detection
- Data analysis and report
- Expected turnaround time (after physical arrival of samples):
  - 3-5 days

#### Requirements and considerations:

- Volume: >5 µl;
- Minimal amount: 1-5 µg; optimal amount: 2-10 µg
- Dissolve sample in volatile solvents / free of non-volatile buffers, salts, detergents, primary amines, etc.
- Primary and secondary amines react with the reagent
- Small amounts of buffer are compatible with the pre-column reaction as long as it does not alter the pH of the reaction (40 µl 0.2 M borate, pH 9)

### Quantification of Free Amino Acids

#### General description:

The workflow consists of:

- Protein precipitation using 5-sulfosalicylic acid (SSA)
- Reaction with AccqTag (Aminoquinolyl-N-hydroxysuccinimidyl carbamate, Waters)
- MassTrak UPLC reversed-phase separation of the amino acid derivatives
- UV detection
- Data analysis and report
- Expected turnaround time (after physical arrival of samples):
  - 3-5 days

#### Requirements and considerations:

- Optimal volume: >50 µl
- Volumes indicated are for urine and plasma; they may be significantly different for different species or for tissue extract.

Do not perform SSA precipitation. It this should be carried out right before analysis.