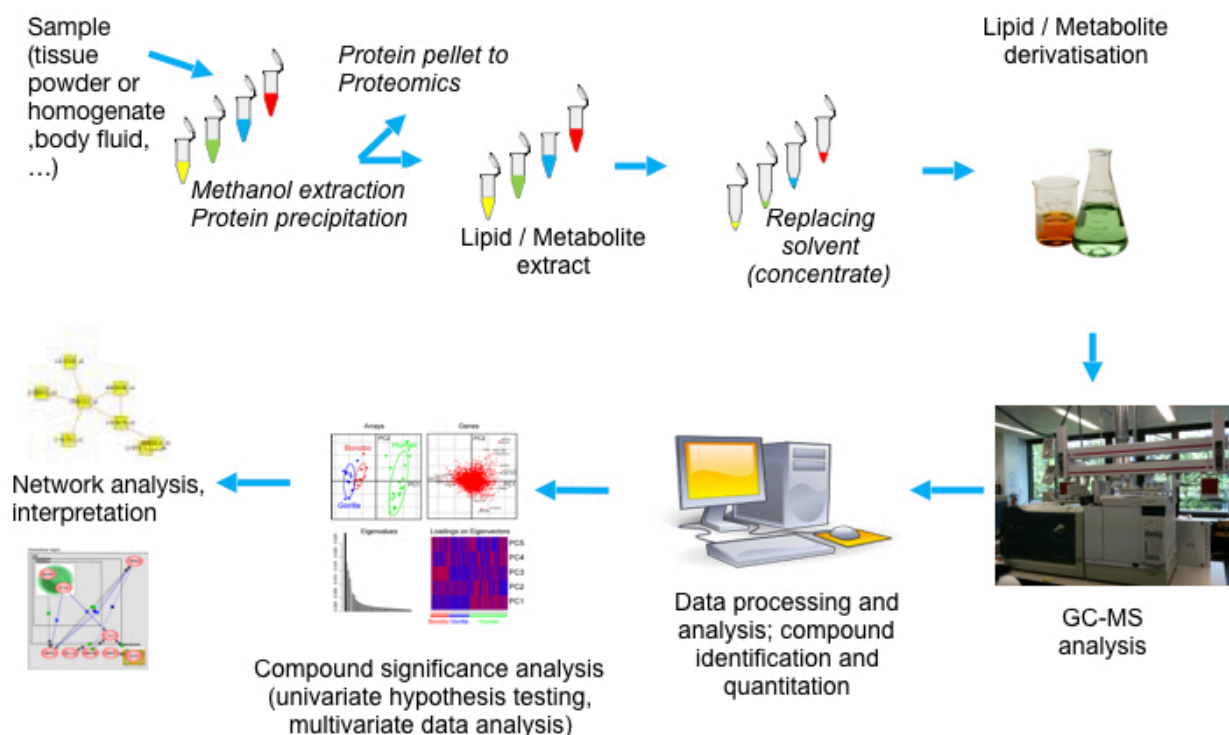


Info Sheet: GC-MS based metabolite analysis

General description

GC-MS technology is useful for the analysis of all classes of metabolites and lipids in the lower mass range from 10 up to 600 Dalton. GC-MS is especially suited for gases, volatile compounds, very small metabolites (e.g. pyruvate, lactate), sugars and sugar phosphates, fatty acids and steroids. The high separation capacity of GC enables the analysis of structural isomers, e.g. omega 3 and 6 fatty acids. Gases and volatile compounds can be analysed with minimal sample preparation, all other compounds have to be converted by chemical derivatization to a volatile form. As the GC transfers only volatile compounds to the MS, samples with high salt concentrations can be analysed without loss of performance.

Workflow for targeted analysis or profiling



Requirements and considerations

Appropriate extracts from a minimum of biological material as listed below can readily be analysed:

- 1E6 eukaryotic cells
- 10E6 bacterial cells
- 25mg plant or animal tissue (wet weight)
- 200uL body fluid (serum, plasma, urine, cerebrospinal fluid, saliva)
- Depending on the sample matrix and the biophysical nature of the analytes in question, a tailored derivatization procedure may have to be established