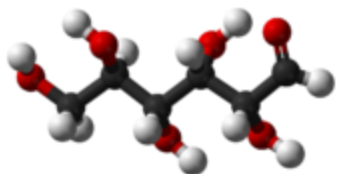
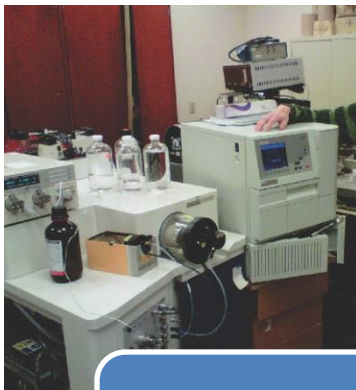
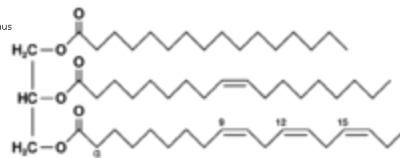
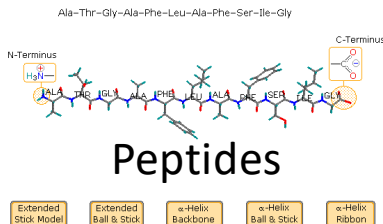


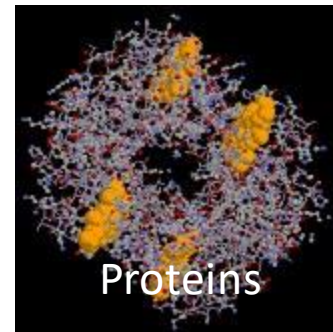
When to Use Electro-spray Ionisation Mass Spectrometry



Glucose



TAG's



Proteins

Which Mass Spectrometry Method to Use?

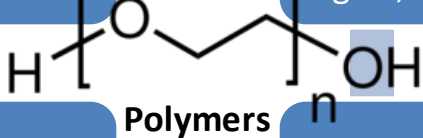
Because ESI originates from solution, adducts such as K^+ , Na , NH_4^+ and H^+ can be added to the solution to enhance the mass spectral signal, of the polar analyte.

Project Development.

Analyse the synthesis of your compound at each stage in the process

ESI

Soft Ionisation
Atmospheric Source
from Solution Phase

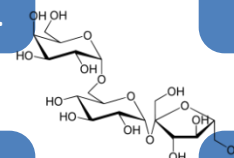


Separation of ions, using Time of Flight Mass Spectrometry.

Mass Range 50-3000amu

Large Biological Molecules can be identified by multiple charged states.

Mass / Charge



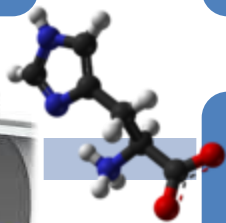
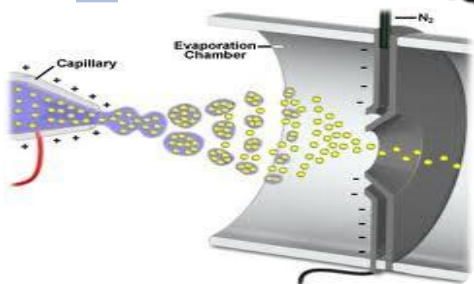
Raffinose

Compound Confirmation

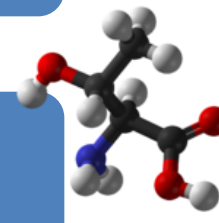
1. Isotope Calculation comparisons
2. Comparison with standard
3. MS:MS, confirmation via a compound fragmentation patterns.

Histidine

Threonine



Addition of H^+ ions in positive Mode
Loss of H^+ ions in negative Mode
Creation of Gas Phase Ions.



MIXTURES of Compounds.

Liquid Chromatography, LC:MS

A suitable column before the ESI source. Will retain and elute compounds into the source at different times thus separating the MS signals and reducing the complexity of direct inject and revealing less abundant chemical compounds





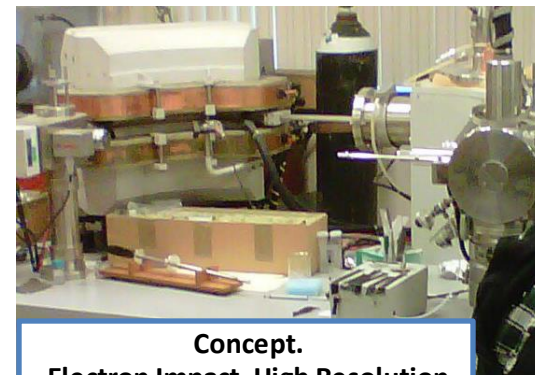
GC:MS
HP 6890 Series with
5973 MSD

Which Mass Spectrometry Method to Use?

EI: Electron Impact?

Which Instrument?

Gas Chromatography MS or
Direct Probe MS

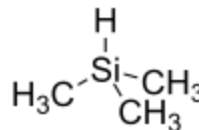


Concept.
Electron Impact, High Resolution
Mass Spectrometer.

GC:MS

Criteria:

1. **Mixture** of low molecular (>600 amu) weight organic compounds.
2. Know what compounds your sample may contain and what their boiling points are.
3. **Prepare a 1mg/ml sample in hexane.**



DIRECT PROBE

Criteria:

1. **Pure** Sample, (no solvent, or impurities).
2. Mass less than 800 amu.
3. Volatile, i.e not a salt.



GC:MS

Essential Oil components.
Small aromatic molecules.
Pesticides, herbicides.
Insect pheromones.

GC:MS

Derivatisation?

If you want to analyse free fatty acids (FFA), alcohols, sterols and/or amino acids, these need derivatising.

We can advise.

EI: Direct Probe.

Want to publish result?

Add: Accurate Mass.

