

Analytical laboratory

Task 1: Identification of unknown compounds

You will obtain two samples of unknown compounds (around 0.5 g). During the duration of the practical it is your task to establish the structure of the unknown compounds given to you.

For this purpose you need to do the following:

1. Establish the solubility of the compounds to allow selection of suitable solvents for chromatography and spectroscopy.
2. Obtain an IR spectrum of the compounds.
3. Obtain ^1H and ^{13}C -NMR spectra of the compounds (hand it in to the TA running the NMR spectra. State the appropriate solvents).
4. Obtain a UV-VIS spectrum of the compound.
5. Obtain a high resolution mass spectrum and fragment spectra of the compound (time permitting the samples can be analysed during the practical session by Anja Müller, if not she will provide you with the data).
6. Obtain a melting point of the compounds.
7. Perform any other chemical test you find useful (eg measure pH of a solution, run a TLC or make a derivative)

Once you have collected all the data assign the structure of the compound. Carry out a literature search on the compound (use your tentative structure) and compare whether your data are in agreement with the reported data.

Produce a short report on your findings, giving spectra interpretation, comparison with literature data and your final structure suggestion.