

Homework 7 – 2017/05/15

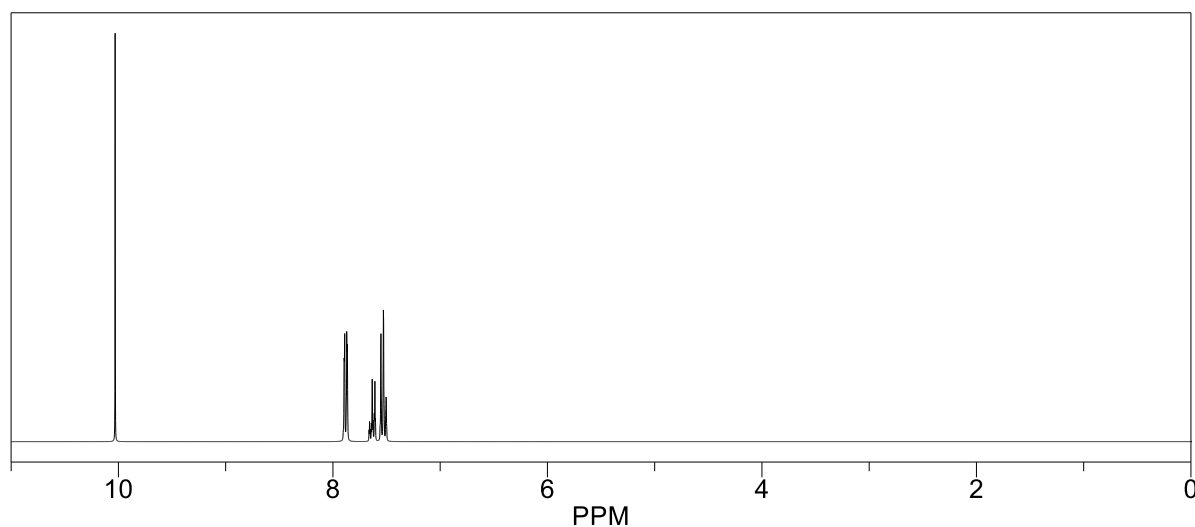
1) Analysis of an unknown compound gives the following data:

Strong IR absorption at 1696 cm^{-1} , also absorbs in the $2700\text{--}3100\text{ cm}^{-1}$ region.

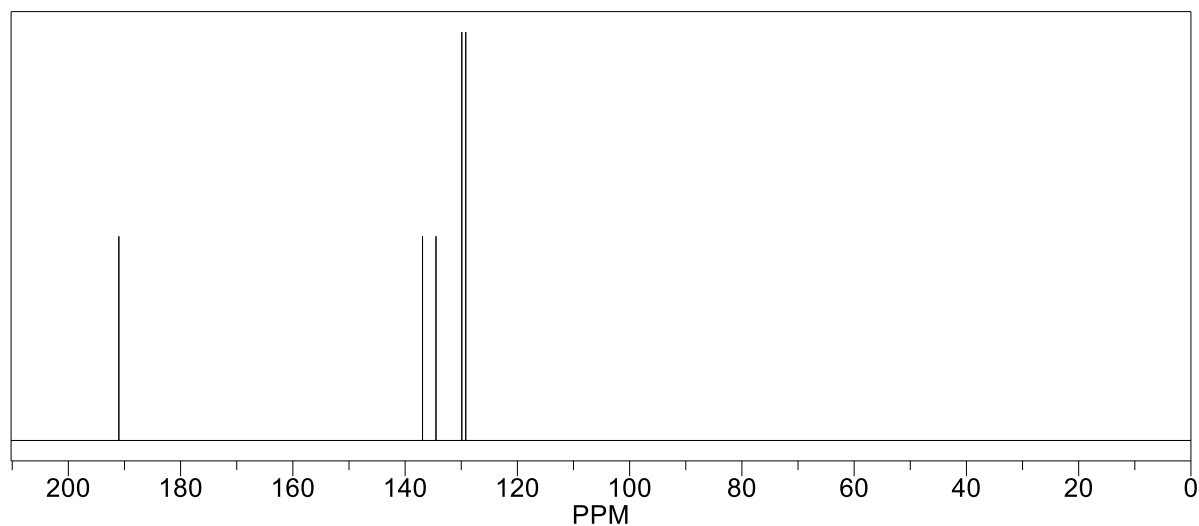
m/z at m/z : 106.0419 (100.0%), 107.0452 (7.6%)

The compound contains 79.23% C; 5.70% H; 15.08% O (weight % for all)

^1H NMR spectrum:



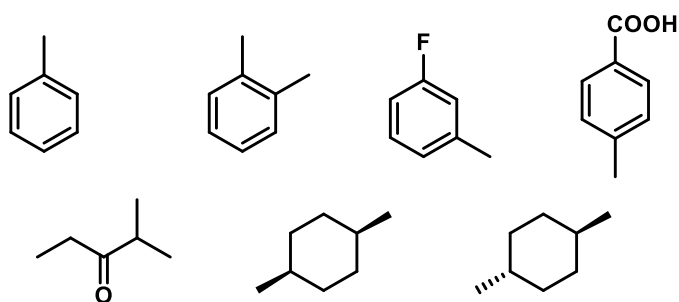
^{13}C NMR spectrum:



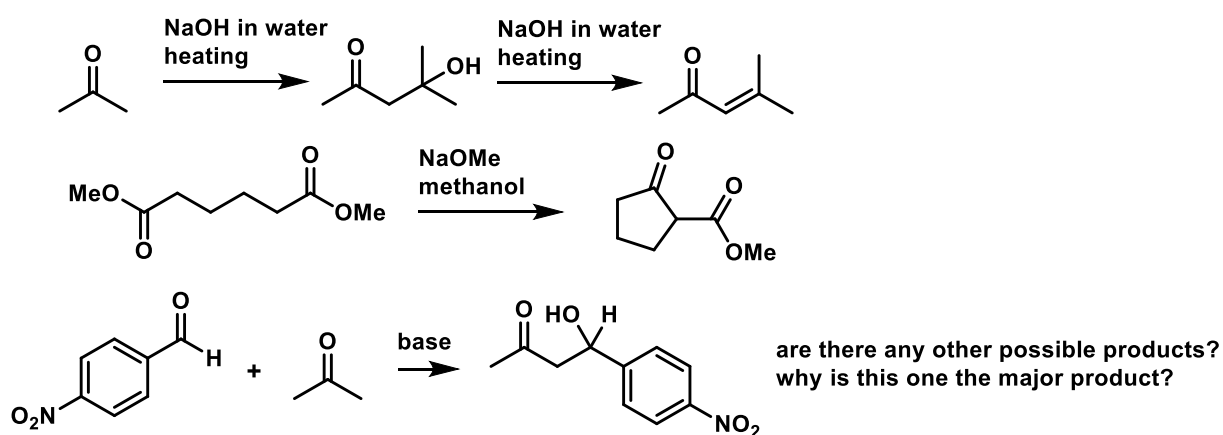
Suggest a structure for the compound (use the SI-data)!

2) Draw the reaction of the mystery compound from question 1) with methylmagnesium bromide (mechanism, too)! How many products do you get?

3) Predict the ^1H NMR spectra of the following compounds (number of signals and approximate places – use the SI-data):



4) Suggest mechanisms for the two steps of the following reactions:



Solutions can be handed in to Daniel Kovacs or to me in person, or you can mail them to eszter.borbas@kemi.uu.se

As long as you attempt to answer at least one question you will get feedback.

/Eszter

