

Practical courses in Medicinal Chemistry II

Timetable

- every even Thursday 13.00 – 20.30
- September 19th – December 12th , 2013
- 7 lessons
- **punctuality is necessary !**
- no absences will be tolerated

Organisation

- cycle of 6 exercises: 5 synthetic + 1 physico-chemical
- work in pairs
- 2 pairs perform the same task at the particular lesson (but different versions of the same task are possible)
- every pair begins with the exercise chosen by the lecturer at the first lesson and continues with exercises in consecutive order
 - if the exercise No. 6 is reached the pair continues with the exercise No. 1

Requirements to get the credit

- complete attendance
- products in appropriate amounts and purity
- complete reports with appropriate data and attachments
 - spectra charts and their interpretations
 - chromatograms
 - ratio of peak areas of acetylsalicylic and salicylic acids
 - retention times and factors
 - yields in g and %
 - melting points
 - absorbance or specific absorption values
- at least 60 % success in tests

Reminder of elementary safety rules

- wear laboratory coat
- do not wear jewels, rings, bracelets etc.
- **smoking is strictly forbidden** in all the university buildings
- eat and drink in a laboratory is forbidden
- long or artificial nails are not recommended
- every oil bath which is heated must contain a thermometer
- every apparatus containing a stand must be placed on its stand

Reminder of elementary safety rules - continued

- power cords and tubing must not touch hotplates or heated baths
- water input into a condenser is from bottom, output from top
 - allow the cooling water flow only with smaller stream
 - check ends of tubing which are connected either to the condenser or to the water tap if they are not damaged
- work with chloroacetyl chloride and ethereal hydrogen chloride must be performed in a fume hood
- volumes of liquids are measured with volumetric cylinders or with pipettes equipped with **pipette fillers (controllers)**
- all other safety rules which you have listened in other chemical disciplines remain valid

Where you will find your material and equipment and where you will work?

- Equipment for you is placed in lockers and drawers with **blue numbers and letters** (e.g. **5a – 5d**), keys can be found at the hanger outside the left fume hood
- You will work at the desk in which your lockers and drawers are placed
- If your equipment is placed in lockers and drawers under a window (**21** and **23**), you will work at the nearest working desk (not at the table under the window)
- Chemicals are placed in the left side fume hood or at a side of working desks
- **Sodium** is given cut into smaller parts by the laboratory assistant into a dry flask filled with the appropriate volume of propan-2-ol; you have to ask him

List of particular exercises

Exercise No.	Table or locker No. / Place	Name of the exercise	Outcomes needed in addition to reports
1	1 + 3	Calcium dobesilate	UV spectrum, specific absorbance at aprox. 301 nm
2	7 + 9	Lidocaine	interpreted IR spectrum, TLC, melting point
3	5 + 23	Acetylsalicylic acid	TLC and HPLC chromatogrammes, retention parameters, approx. purity, melting point
4	13 + 15	Phenytoin	TLC
5	11 + 21	Parabens	TLC, interpreted $^1\text{H-NMR}$ spectrum, melting point
6	Laboratory No. 345 opposite	pK_a of phenytoin	pK_a , UV spectra with table of absorbances, answers of additional tasks

At the start, during and at the end of a practical lesson ...

- Before you begin your work, check the content of the locker and the drawers of your working desk using the list placed inside the door of the locker; **tell** the laboratory assistant or the teacher about the potential deficiency in equipment **immediately**
- If you break or damage any piece of laboratory glass, report it immediately to laboratory assistant together with your name
- After you have finished your work, contact the laboratory assistant and let him (her) check your working desk
- Reports of your tasks are continuously checked at the end of every lesson in a preliminary form and definitely before recording the credit
 - Finally they must contain all the requirements listed in above table (identity date, interpreted spectra etc.)