CH 351 EXPERIMENT 2

IDENTIFICATION OF ORGANIC COMPOUNDS BY CHROMATOGRAPHIC METHODS 2

(Part 1) Identification of organic compounds by Thin Layer Chromatography (TLC).

The solid mixture of the following three compounds will be provided in a vial:

4-nitrobenzaldehyde
4-cyanobenzaldehyde
2,3-dimethoxybenzaldehyde

In addition, 3 vials with the individual compounds (name of the compounds will on the vial) will be provided.

Develop a separation method for the mixture and determine the position of each compound on the TLC plate. Apply the theoretical background and practical basics that were covered during the lecture part of the course.

Your laboratory report should include the following.

- A chemical structure of the compounds listed.
- A **reproducible** description of the procedure used (solvent, tlc plate, visualization method etc.)
- A drawing of your developed TLC plates
- The calculated Rf values for each compound
- The identification of the three compound on the TLC plates.

(Part 2) Identification of organic compounds by Gas Chromatography (GLC).

The liquid mixture of the following three compounds will be provided in a vial:

o-xylene
m-xylene
p-xylene

In addition, 1 vial with p-xylene will also be provided.

Develop a separation method (only baseline separation is acceptable) for the mixture and determine the retention times for each compound. Then identify, which peak represents *p*-xylene. Apply the theoretical background and practical basics that were covered during the lecture part of the course.

Your laboratory report should include the following.

- A chemical structure of the compounds listed.
- A **reproducible** description of the procedure used (GC parameters etc.), with the way of developing it.
- The retention times for each compound
- The chromatograms of each run, highlighting the final.
- The identification of *p*-xylene in the mixture.

(Part 3) Identification of organic compounds by High Performance Liquid Chromatography (HPLC).

The liquid mixture of the following three compounds will be provided in a vial:

Indole
7-Me-Indole
5-Me-Indole

In addition, 3 vials with the individual compounds will also be provided.

Develop a separation method (only baseline separation is acceptable) for the mixture and determine the retention times for each compound. Then identify, which peak represents which compound. Apply the theoretical background and practical basics that were covered during the lecture part of the course.

Your laboratory report should include the following.

- A chemical structure of the compounds listed.
- A **reproducible** description of the procedure used (HPLC parameters etc.), with the way of developing it.
- The retention times for each compound.
- The chromatograms of each run, highlighting the final.
- The identification of the 3 compounds based.