



The institute of Forensic Medicine Basel offers the possibility to conduct a master thesis in the field of forensic toxicology.

The thesis can be conducted in either 6 or 10 months:

Master Thesis at the Institute of Forensic Medicine Basel (6 months, start: beginning of 2023)

Project Title:

Analysis of synthetic cannabinoids in urine

Key methodologies:

- Sample preparation techniques (e.g. salting out liquid-liquid extraction, solid phase extraction)
- High-performance liquid chromatography coupled to high-resolution mass spectrometry (HPLC-HRMS)
- Data review and statistical analyses

Project Description:

The aim of the master thesis project is to develop a suitable sample preparation technique for the analysis of synthetic cannabinoids and respective metabolites in urine samples. Thereby different sample preparation techniques will be investigated and compared. The student will be working with state of the art high-performance liquid chromatography coupled to high-resolution mass spectrometry.

About us:

The department of forensic chemistry and toxicology is specialized in the analysis of drugs of abuse in various biological specimens (e.g., hair, blood, urine). The department is ISO accredited, meaning that the student will also gain an insight into a regulated environment.

We are seeking a master student who likes to conduct laboratory work and who is greatly interested in analytical chemistry.

or:

Master Thesis at the Institute of Forensic Medicine Basel (10 months, start: beginning of 2023)

Project Title:

Analysis of synthetic cannabinoids in urine

Key methodologies:

- Sample preparation techniques (e.g. salting out liquid-liquid extraction, solid phase extraction)
- High-performance liquid chromatography coupled to high-resolution mass spectrometry (HPLC-HRMS)
- In vitro metabolite generation using pooled human liver microsomes
- Data review and statistical analyses

Project Description:

The aim of the master thesis project is to develop a suitable sample preparation technique for the analysis of synthetic cannabinoids and respective metabolites in urine samples. Thereby different sample preparation techniques will be investigated and compared. The student will be working with state of the art high-performance liquid chromatography coupled to high-resolution mass spectrometry. During the project, authentic urine samples will be screened using the newly developed method. Additionally, metabolites of new synthetic cannabinoids are generated using in vitro models (e.g., pooled human liver microsomes) in order to propose suitable screening targets.

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We are seeking a master student who likes to conduct laboratory work and who is greatly interested in analytical chemistry.

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