

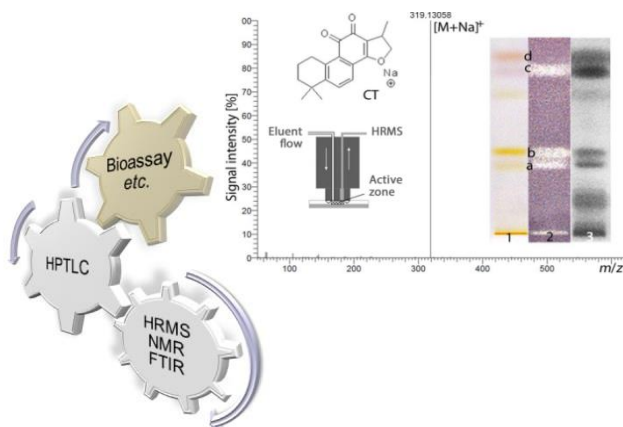


Modul

Effect-directed analysis by HPTLC-bioassay-HRMS

Prof. Dr. Gertrud Morlock

- Chromatography combined with assays
- Pointing to single bioactive compounds in complex samples
- Streamlined profiling via biological and biochemical assays in the adsorbent bed
- High-performance thin-layer chromatography combined with effect-directed assays and high-resolution mass spectrometry (HPTLC-UV/Vis/FLD-EDA-HRMS)



SAFETY AUTHENTICITY RISK ASSESSMENT

PROGRAM

WED 03. – SUN 07.03.2021

Each day:

- 09.00 Start
- 10.30 Virtual coffee (30 min)
- 12.30 Virtual lunch (60 min)
- 15.00 Virtual coffee (30 min)
- 17.00 End

The coupling to ESI-HRMS or DART-MS is also shown.

WEDNESDAY

Gram-negative antimicrobials via *Aliivibrio fischeri* bioassay
Gram-positive antimicrobials via *Bacillus subtilis* bioassay

THURSDAY

Hormone-effective compounds via planar yeast estrogen/androgen screen (pYES/pYAS)
Agonistic and antagonistic effect detection
Genotoxic compounds via SOS/umuC assay

FRIDAY

Enzyme inhibitors via α - and β -glucosidase, α -amylase, acetyl and butyryl cholinesterase, tyrosinase and β -glucuronidase assays

SATURDAY

On-surface Simulated Digestive System: nanoGIT^{active}

SUNDAY

On-surface metabolization by the S9 enzyme system

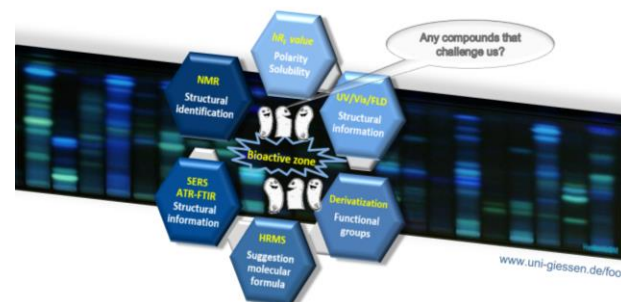
REGISTRATION/CERTIFICATE

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RESPONSIBLE FOR MODULE



Justus Liebig University Giessen
Prof. Dr. Gertrud Morlock
Full Professor
Chair of Food Science
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MODULE AIMS

The participants

- Understand the meaning of effect-directed analysis as well as advantages and disadvantages of the different techniques
- Survey the variety of on-surface or *in situ* assays (in the adsorbent bed)
- Know the streamlined workflow on one plate, *i. e.* parallel separation of compounds in complex samples, discovery of active compounds and their characterization by chromatographic, spectroscopic and spectrometric information (3-20 min/sample for up to 20 samples in parallel)
- Recognize the highly efficient combination of planar chromatography with biological and biochemical or other effect-directed assays
- Realize the power of hyphenated HPTLC and can benchmark effect-directed profilings