

Measuring the sum - A novel screening method for ergot alkaloids in food

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Introduction

- ergot alkaloids are part of the most common contaminants of cereals worldwide
- determination of ergot alkaloid content in food via quantitation of **12 major ergot alkaloids** (HPLC-FLD or -MS)

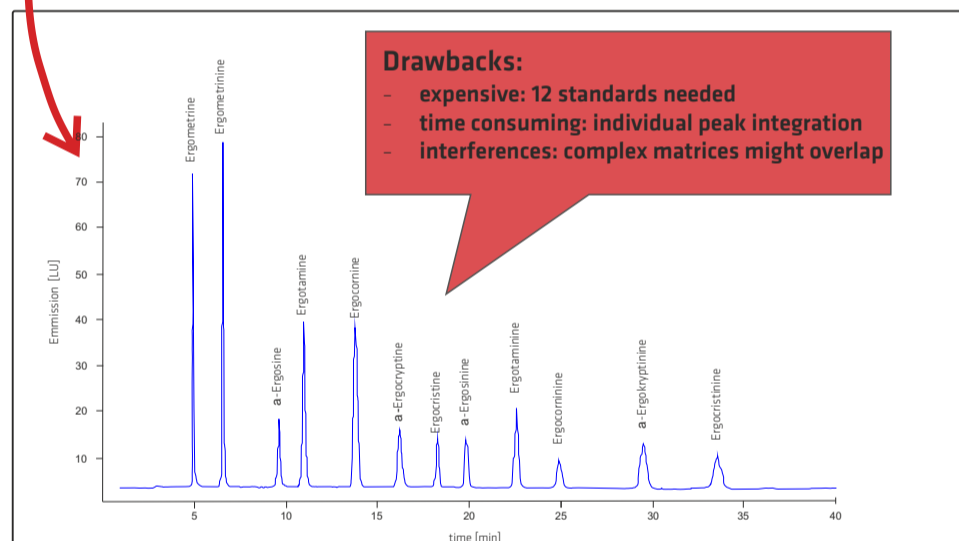
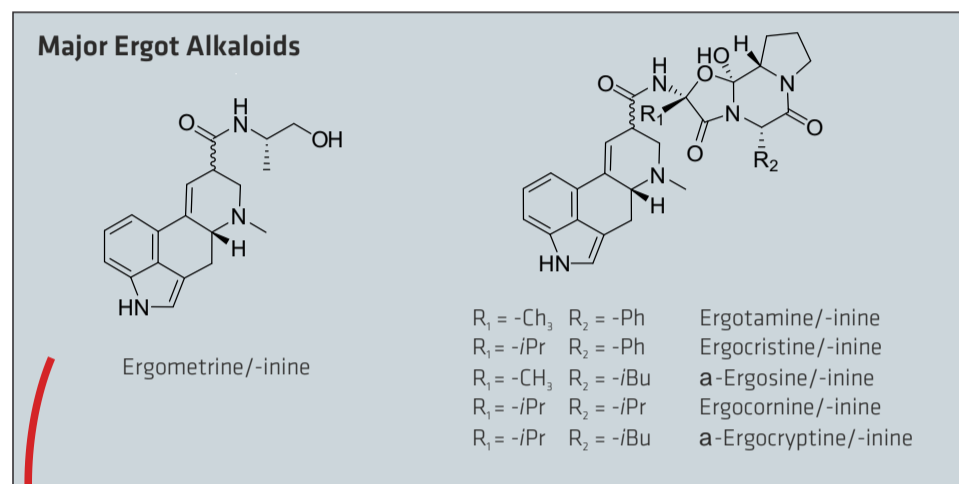


Fig. 1: HPLC-FLD chromatogram of ergot alkaloid mix standard.

Objective

- ergot alkaloids should be measured as a sum parameter
- alkaloids need to be transferred one basic structure (**lysergic acid derivative**)
- selective analyte separation/purification via **molecularly imprinted polymers (MIPs)**
- quantitation via HPLC-FLD/-MS

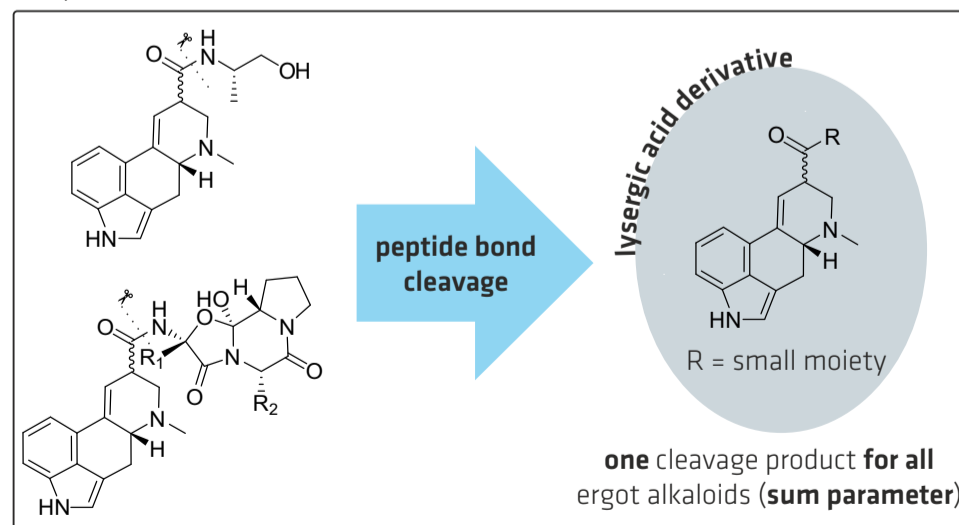


Fig. 2: Transfer of ergot alkaloids to one basic structure.

Molecularly Imprinted Polymers (MIPs)

- mimic concept of antibodies (molecular recognition)
- advantages: high stability, highly reusable

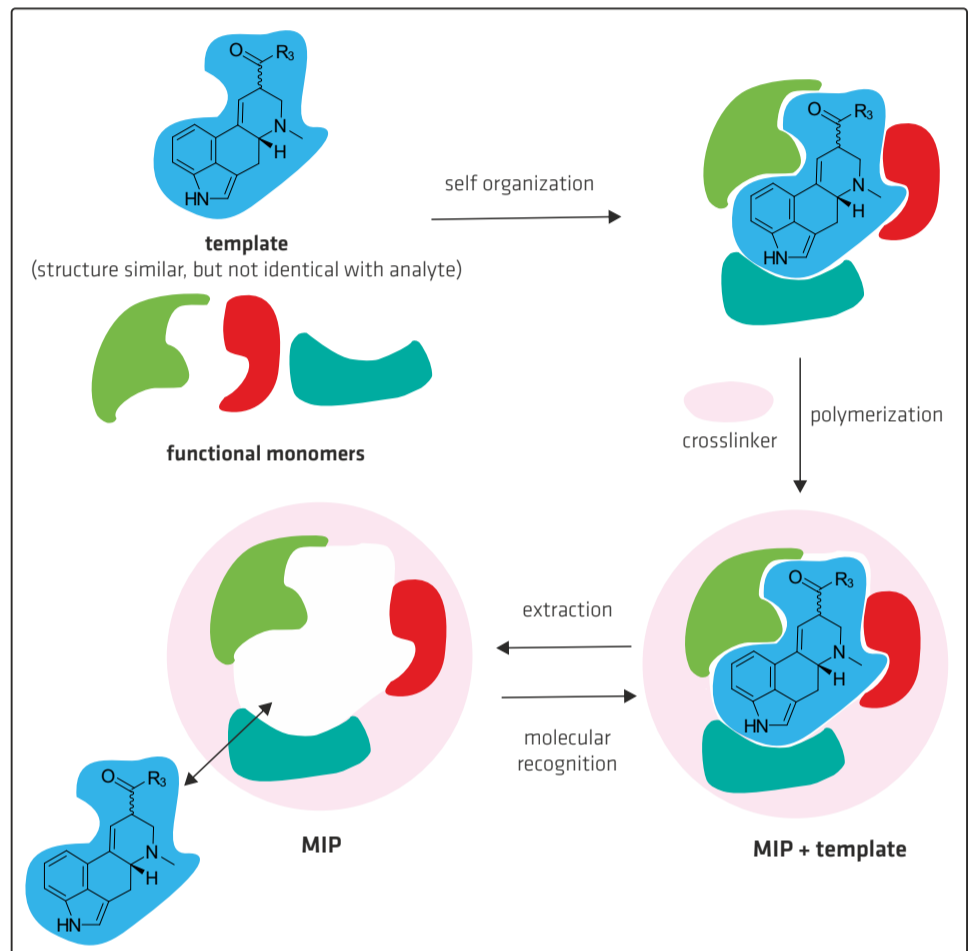


Fig. 3: Concept of molecular imprinting.

Workflow

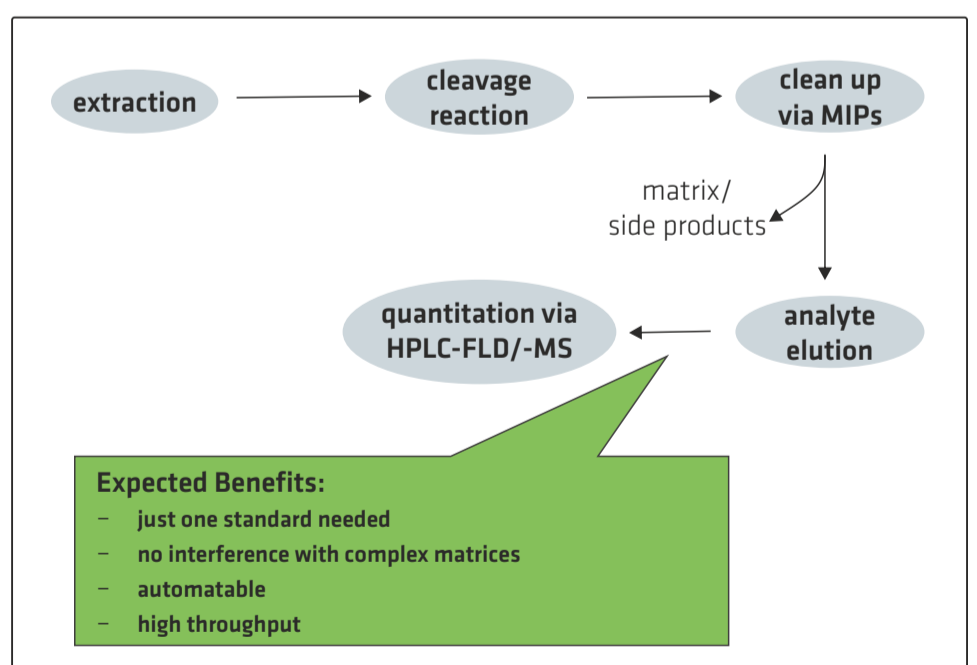


Fig. 4: Planned workflow.

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