



## Metabolomic analysis

Knowledge of key biosynthetic steps and bottlenecks is a prerequisite for effective metabolic engineering of production strains. Not only the immediate biosynthetic precursors but also the general energetic and oxidative state of the production host can significantly influence achievable yields and quality of bioproducts.

### BACKGROUND

Bioengineering of biological production systems either by traditional strain selection and adaption or by directed evolution approaches typically leads to systems either limited by the availability of individual synthetic precursors or by a general metabolic burden overload. Detailed analysis of the metabolic network allows identification of bottlenecks and side reactions, thereby pushing the production rate and product purity even further.

### TECHNOLOGY

We employ hydrophobic interaction liquid chromatography high resolution mass spectrometry to quantify constituents of the major catabolic pathways and the energy and redox metabolome (A(cM,M,D,T)P, NAD(P)/H, Glutathione) in the relevant production hosts (bacterial, fungal and mammalian).



### OFFER

Under protection of a CDA/NDA we provide you with professional strategies for targeted analysis of metabolites from various hosts. IP developed in such a project would fully belong to our investor/industrial partner.

### EXPERT:

Dr. Matthias Schittmayer-Schantl

### AVAILABLE FOR:

- Joint Research Projects
- Contract Research

### DEVELOPMENT STATUS:

Technology Readiness Level 6  
(Demonstrated in relevant environment)

### IPR:

Can be generated for our industrial partners / investors

### KEYWORDS:

Metabolomics  
Glycolysis  
Glutaminolysis  
TCA  
One Carbon (Folate) cycle  
AMP/ADP/ATP  
NAD(P)+/NAD(P)H  
Glutathione

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