PROJECT OFFER

NMR-based metabolomics (profiling, absolute quantification, structure elucidation)

Understanding the intricacies of metabolite fingerprints, their variations and absolute concentrations is paramount for a diverse array of studies. This includes biomarker studies, mechanistic inquiries, metabolic engineering endeavors, or quality assessments of complex mixtures.

BACKGROUND
Metabolomics is a cornerstone in metabolism research, spans from organelles to human populations, and strives to decipher the molecular basis of biochemical processes. By leveraging Nuclear Magnetic Resonance (NMR) spectroscopy our approach allows for the elucidation of the metabolome - sum of the chemical fingerprints - enabling systemic conclusions about metabolic changes and disease trajectories.

TECHNOLOGY
Our offer revolves around NMR-based metabolomics, showcasing numerous advantages. These include:
1. Absolute Quantification: Easier implementation of precise quantification
2. Reduced 'dark' space: Minimization of unassigned features for enhanced data clarity
3. Identification and Structure Determination: Ideal for yet unidentified metabolites.
4. Isotope tracing: Straightforward implementation for deeper insights
5. Easy sample preparation: User-friendly procedures
6. Robustness: Ensuring reliable and consistent results
7. Lipoprotein Detection and Quantification
8. Cost-Effective: Lower costs for both sample preparation and measurements compared to mass spectrometry (metabolites) and analytical ultracentrifugation (lipoproteins)

OFFER
Under protection of a CDA/NDA we provide you with professional strategies for untargeted or targeted profiling or quantification of metabolites (all matrices) and lipoproteins (human serum/plasma) from a plethora of matrices ranging from, but boing not limited to biofluids, tissues, cells, cell culture media, plant extracts, our other complex mixtures of small-molecules. IP developed in such a project would fully belong to our investor/industrial partner.

acib-EXPERTS:
Univ. Prof. Dr. Tobias Madl
Dr. Hansjörg Habisch

AVAILABLE FOR:
Joint Research Project, Contract Research

DEVELOPMENT STATUS:
Technology Readiness Level 6 (Demonstrated in relevant environment)

IPR:
Can be generated for our industrial partners / investors

KEYWORDS:
NMR spectroscopy
Metabolomics
Multivariate data analysis
Metabolite identification
Metabolite quantification
Bioinformatics
Omics
Biological samples
Clinical samples
Complex mixtures
Lipoproteins

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