

# biocrates kit technology



### Mass spectrometry-based metabolomics kits



Ready-to-use



Automated workflow



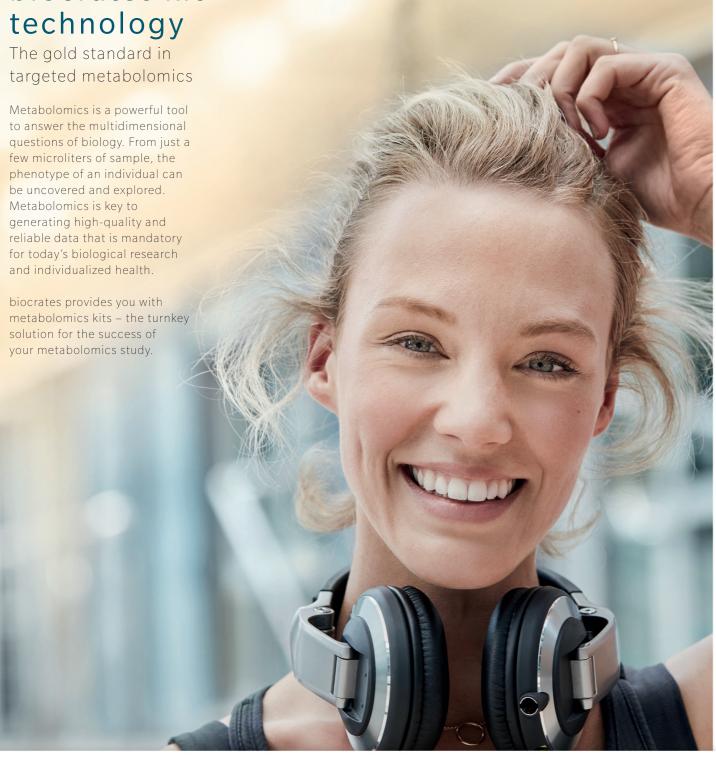
Standardized, quantitative



High throughput

For research use only. Not for use in diagnostic procedures

# biocrates kit



## More information



Visit our website to find out more about metabolomics and our products biocrates.com



# Why use metabolomics kits



#### Ready-to-use

- ► Fully integrated workflow in one box (reagents, consumables, LC-MS methods, workflow manager MetIDQ™ software)
- ► Kit implementation in less than 2 days (no method optimization



#### High throughput with minimal sample volume

- ► Hundreds of samples per week with only 10 µL biofluid per sample
- ► Ability to measure metabolites in many matrices and species on a



#### Automated and guided workflow

- ► Validated and easy-to-use sample extraction protocols
- ► Workflow manager MetIDQ<sup>™</sup> allows data export in various file formats for statistical analysis
- ► Automated quantification and technical validation

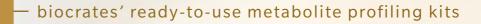


#### Standardized, quantitative and quality-controlled

- ► Absolute quantification and highly reproducible data
- ► Quality controls for performance check and data normalization
- ► Designed for longitudinal studies and inter-lab comparability

# Use kits locally to connect science globally

Connected data brings your research to a new level



### Standardized and quality-controlled

- ► Harmonized data format & data storage; simplified and biology-driven data analysis
- Quantitative and reproducible
  - ▶ Combine data from multiple experiments, instruments & laboratories in one database
- Trusted globally
  - ► Independent validation of third-party results

 Total ownership of the results within a global network -Enabling the FAIR principles





# Workflow initiation MetIDO<sup>TN</sup>

► Create a new project workflow in

► Register your samples



- ▶ Perform system suitability test
- ► Derivatize and extract your samples
- ▶ Pipette samples, standards, and QCs onto the plate



### Data collection

► Run plates with LC- and FIA-MS

▶ Instrument-specific methods are provided



### **Ouantification & Validation**

- ► Built-in quantification tools
- ▶ Built-in data normalization suite
- ► Automated sensitivity and accuracy check



### Statistics & Interpretation

- ► Perform basic statistics with the MetIDQ™ StatPack
- ► Export from MetIDQ<sup>TM</sup> to your statistics software of choice
- ► For MxP® Quant 500: support your data interpretation with the innovative MetabolNDICATOR™ add-on to MetIDQ™



### **Insight & Understanding**

- ► Compare your results with published data from other laboratories
- ► Make decisions based on standardized and reproducible metabolomic data

# Reliable data for sustained scientific impact

Standardization for increased reliability



### Kit technology

- ► Quantitative data
- ► Technical validation
- ► Standardized data format
- ► Kit workflow



### Across laboratories and instruments

- ► AbsoluteIDQ® p180 kit Ring trial with 5 labs (3 MS platforms) 7.6% mean inter-lab precision (Siskos et al. Anal. Chem. 2016)
- ► MxP® Quant 500 kit Ring trial currently in progress



### Data can be compared and combined across labs, longitudinal and worldwide

- ► Inter-laboratory comparison
- ► Inter-MS instrument comparison

# Workflow manager MetIDQ™

biocrates kit technology is the product of years of experience in quantitative targeted metabolomics.

The workflow manager MetIDQ™ guides you through the whole process from sample registration to data normalization, increasing process safety and robustness.

The kits comprise all instrument-specific acquisition methods, including all MRM transitions and optimized MS and chromatography parameters. This allow a quick and easy kit setup without the need for extensive method development.





MS data



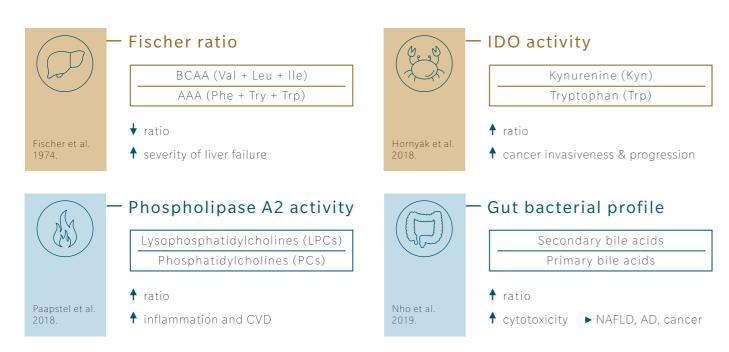


Data normalization & MedabolNDICATOR

4 | biocrates kit technology The gold standard in quantitative metabolomics | 5

### More than metabolites

Our specialized software module MetabolNDICATOR™ automatically calculates and reports more than 230 relevant metabolite sums and ratios from data generated with the MxP® Quant 500 kit. This adaptable feature also allows the user to define new sums and ratios to explore new biochemical aspects of the data.

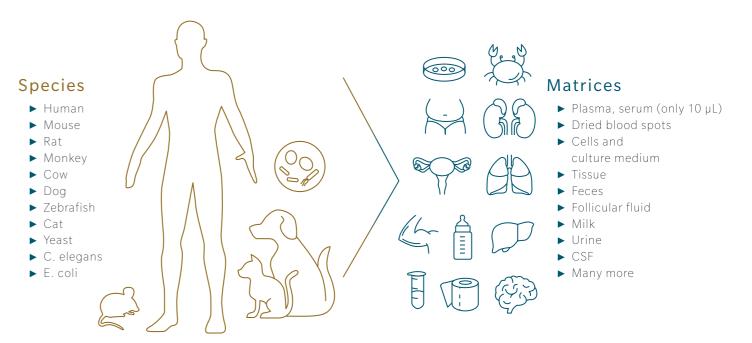


No matter which way you choose to generate your data, we offer a variety of data analysis and interpretation options when you need it. This shortens your time to finalize your project and gives you the freedom to explore the future of research and health.

# Metabolomics – The universal language of biology

Connecting biological systems

Application of metabolomics is feasible for a wide range of sample matrices and species. Which samples do you work with?



# Exploring your data

### Data only

- ► Raw data processing
- ► Quality control
- ▶ Data normalization

### Statistical package

- ▶ Data processing (e.g. handling of values < LOD, outlier detection, log transformation)
- ► MetabolNDICATOR™\* (i. e. calculation of metabolite sums and ratios incl. background information)
- ▶ Descriptive statistics (e.g. mean, median, SD, IQR)
- ► Univariate statistics
- ► Significance testing (e.g. p-values, false discovery rates)
- ► Fold changes
- ► Multivariate statistics (e.g. PCA, PLSDA, cluster analysis)
- ▶ Data visualization (e.g. box plots, score plots, heatmaps)

### Data interpretation

- ► Pathway analysis
- ▶ Biochemical interpretation (e.g. consideration of specific metabolite sums)
- ► Literature research



# Zoom into your favorite pathway

From hypothesis generation to verification

### Choose the kit

#### MxP® Quant 500 kit

- ► Most comprehensive kit to study mechanisms of disease, nutrition and the microbiome
- ▶ Up to 107 small molecules & 523 lipids

#### MxP® Quant HR Xpress kit

► Covers 42 small molecules & 321 lipids

#### AbsoluteIDQ® p180 kit

- ► Targeted metabolomics with >1000 scientific publications
- ▶ Up to 43 small molecules & 145 lipids

### AbsoluteIDQ® p400 HR kit

▶ Up to 43 small molecules & 365 lipids

### Zoom into interesting pathways with more sensitivity and broader coverage

· Hypothesis verification

biocrates kits	available as a service only			
AbsoluteIDQ® Bile Acids kit  ▶ Up to 20 bile acids	Oxysterols, free  ▶ 18 metabolites	Fatty acids, free   total  ▶ 31 metabolites	M=	Tryptophan  ▶ 17 metabolites
AbsoluteIDQ® Stero17 kit  ▶ Up to 17 steroid hormones	Eicosanoids  ▶ 17 metabolites	Energy metabolites  ▶ 21 metabolites	2	Acylcarnitines  ▶ 44 metabolites

- Detailed pathway view

### Read more



#### biocrates list of metabolites

More than 1,000 metabolites accessible through targeted metabolomics

biocrates.com/metabolites



### Applications of metabolomics

Understand where metabolomics is already changing lives today

biocrates.com/applications

Last revised 01/2021



### Our technology

Get a detailed view of how you can implement our kits in your laboratory and which kit is best to choose for your application.

biocrates.com/our-technology



### Compatibility

Mass spectrometry systems

biocrates.com/compatibility



