Metabolites are direct molecular readouts of cell status that reflect a meaningful physiological phenotype. Alterations in metabolic activity are intimately related with the cancer phenotype and its sustenance. BIOCRATES helps researchers to further understand what is happening in cancer cells.

“Three metabolites (lyspPC a C16:0, PC ae C42:5, PC aa C34:2) successfully differentiate breast cancer patients from healthy controls with a sensitivity of 98.1% and a specificity of 96.0%.”


“Metabolomic analysis elucidated several small molecules as markers for the response of breast cancer cells to resveratrol.”


“Recent advances in analytical technologies and statistical capabilities have provided metabolomics the ability to probe much further into the metabolism of cancer.”


Many top-notch international cancer research facilities are already using BIOCRATES’ metabolomics solutions, i.e. German Cancer Research Center, The Institute of Cancer Research/GB, National Cancer Institute CRO-IRCCS/Italy.

- **Biomarkers** for early cancer diagnosis, better knowledge of pathological pathways of cancer
- **Tumor staging**
- Determination of treatment efficacy, drug response
- Developing novel therapeutics (personalized medicine)
- **Metabolic characterization** of tissue and plasma samples from different cancer patients
- Integrate metabolomics with other ‘omics’-disciplines to identify markers (plasma) for diagnosis, therapy, and relapse

BIOCRATES’ easy-to-use Kits and customized Services permit precise and quality-controlled quantification of hundreds of endogenous metabolites. We provide standardized and targeted metabolomics data which enables researchers to compare their results across their labs and beyond.
Mass Spectrometry-Based Quantitative Metabolomics Revealed a Distinct Lipid Profile in Breast Cancer Patients

Qiu et al.

Common methods for diagnosis lack sensitivity and specificity. Targeted Metabolomics can be used to classify breast cancer on the basis of tumor biology, to identify new prognostic and predictive markers and to discover new targets for future therapeutic interventions.

In the study from Qiu et al., the LC-MS/MS based Absolute\textsuperscript{IDQ®} p180 Kit - (BIOCRATES Life Sciences AG, Austria) was used to analyze plasma samples from 55 breast cancer patients and 25 healthy controls.

With a sensitivity of 98.1% and a specificity of 96.0% breast cancer patients were successfully separated from healthy controls using the BIOCRATES Absolute\textsuperscript{IDQ®} p180 Kit.

39 differentiating metabolites were identified, including significantly lower levels of lysophosphatidylcholines and higher levels of sphingomyelins in the plasma samples obtained from breast cancer patients compared with healthy controls. A diagnostic equation using three metabolites (lysoPC a C16:0, PC ae C42:5 and PC aa C34:2) was established:

Metabolic Phenotyping assists in early disease diagnosis, staging and subtyping at the molecular level, reveal biological disease mechanism, and will open up the opportunity to develop individually adapted forms of therapies.

- Common methods for diagnosis lack the sensitivity and specificity.
- Metabolomics provide clinically useful biomarkers in breast cancer, enabling a better stratification of patients.
- BIOCRATES Absolute\textsuperscript{IDQ®} p180 Kit can be used to identify breast cancer biomarkers and successfully distinguish between healthy and cancer patients.

References: