

PRESS RELEASE

PreOmics Introduces a Novel BeatBox™ FFPE Workflow for Accelerated, In-depth Tissue Proteomics

- Introduction of a FFPE workflow extends the tissue proteomics applications of PreOmics' unique BeatBox™ technology
- Launch of novel FFPE workflow enables high-throughput, robust, and fast processing of tissue samples
- Bruker and PreOmics to co-commercialize BeatBox workflows

ORLANDO, Florida, April 14th, 2023 - At the AACR Annual Meeting 2023, PreOmics GmbH announces the launch of a BeatBox-based FFPE workflow, which simplifies, speeds up and standardizes FFPE sample preparation for deep, unbiased tissue proteomics by subsequent protein digestion and nanoLC-MS/MS analysis. The novel BeatBox workflow eliminates the need for xylene-based deparaffinization and enables fast and robust processing of up to 96 samples in parallel for discovery research, as well as for reproducible larger cohort translational and preclinical research and validation.

The [BeatBox™](#) tissue homogenizer and cell lyser is a compact, affordable, and stand-alone benchtop system for convenient, semi-automated sample homogenization of various tissue types and cells. With flexible input amounts from 1-50 mg, it consistently delivers reproducible results for LC-MS-based proteomics with scalable throughput from 1-96 samples. Already successful for fresh tissue and cell-line proteomics, with the novel FFPE protocol the BeatBox can now efficiently process FFPE samples for downstream tissue proteomics. Compared to sonication devices, the BeatBox requires no complex handling or additional water conditioning. FFPE or fresh frozen tissue homogenization takes just 10 minutes with push-button operation.

In a benchmark study, FFPE as well as fresh frozen mouse cardiac muscle, kidney, and liver tissue (provided by the Research Institute of Molecular Pathology in Vienna and the Histology Facility at Vienna BioCenter Core Facilities) was processed using the novel BeatBox FFPE workflow, as well as with a sonication approach. Peptides were analyzed on a timsTOF-HT mass spectrometer (Bruker Daltonics) in DIA-PASEF mode using a 30-minute nLC gradient. The BeatBox-based FFPE workflow was shown to increase the proteomic depth for FFPE, as well as for fresh frozen tissue on average by 14% to 43%, depending on tissue type. Typical Coefficients of Variation (CV) within replicates were below 10%, emphasizing the high repeatability of the homogenization process with the compact BeatBox instrument. Furthermore, the novel approach saves up to 4 hours of time in comparison to the sonication workflow, enabling parallelized high-throughput processing of 96 samples within one working day.

Dr. Michael Wierer, Director of the Proteomics Research Infrastructure at the University of Copenhagen, states: *"We routinely analyze a large number of tissue samples at once, and to improve our efficiency, we have successfully adapted the BeatBox technology for tissue homogenization. Our latest discovery is that the BeatBox technology can efficiently homogenize paraffin-embedded tissue scrolls. This breakthrough now allows us to process large cohorts of FFPE tissue quickly, reproducibly, and with greater precision, opening up the possibility of large-scale biobank projects. By leveraging this technology, we are excited to uncover novel deep proteomics insights in the field of pathology research."*



Dr. Marcello Stein, Chief Marketing Officer of PreOmics, commented: *"With our novel BeatBox-based FFPE workflow, researchers finally can simplify, speed up and standardize FFPE sample preparation without the need of xylene-based deparaffinization to fully exploit its potential for unbiased, deep proteomics. We believe this is a leap forward for the preparation and subsequent proteomic analysis of large sample cohorts."*

Bruker Corporation (Nasdaq: BRKR) and PreOmics have a commercial agreement, enabling Bruker to offer the BeatBox-based tissue workflows for sale with Bruker's timsTOF Pro mass spectrometer.

Have a look yourself: PreOmics representatives will be at the AACR Bruker booth #1818 to showcase the BeatBox and FFPE application note. The application note can be accessed at [here](#).

About PreOmics GmbH

PreOmics empowers our clients in life sciences to establish biological knowledge through efficient, reliable solutions and workflows that set the standard for protein analysis. Our team spirit, energy, and commitment empower us to be both creative and quality focused – A trusted partner with deeply rooted scientific experience. We envisage a future with revolutionary proteomic discovery processes open for everyone. Tools that reveal hidden causes of diseases, ensure sustainable nutrition and provide diagnoses that enhance lives and society.

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