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PRESS RELEASE

PreOmics Introduces New ENRICH-iST Kits and Novel Workflow for Unbiased, Affordable Plasma and Serum Proteomics by LC-MS

- ENRICH-iST enables unbiased enrichment of lower abundant plasma and serum proteins by 50% to more than 100% in human and rodent plasma proteomics in a cost-effective, fast 5-hour workflow

- ENRICH-iST utilizes non-functionalized paramagnetic microbeads supporting automated platforms

- ENRICH-iST enables protein enrichment and tryptic digestion on only 20 microL of starting material

HOUSTON, Texas, June 5th, 2023 - At ASMS 2023, PreOmics GmbH announces the launch of its new *ENRICH-iST™* kits, which enable biologically unbiased enrichment of lower abundant plasma and serum proteins onto non-functionalized paramagnetic particles, enhancing typical depths of plasma proteomics analysis by 50% to more than 100%, compared to neat plasma or serum proteomics without depletion or enrichment. The novel *ENRICH-iST* workflow enables fast and robust processing of up to 96 plasma samples in parallel for reproducible large-cohort translational and clinical research and validation. The affordable *ENRICH-iST* routine enrichment workflow nicely complements existing ultra-deep plasma proteomics discovery research workflows that either use automated bead depletion or nanoparticle array enrichment.

The *ENRICH-iST* technology offers a simple, fast (<5h total) and cost-effective solution for proteomic sample processing of plasma or serum from various species, including humans, rodents, NHPs, dogs and pigs. Requiring only 20 microL of starting material, it consistently delivers reproducible, enhanced results for LC-MS analysis, e.g., by DIA-PASEF timsTOF 4D Proteomics mass spectrometry. Utilizing non-functionalized paramagnetic microbeads, the technology enables biologically unbiased enrichment of lower abundant proteins and supports liquid handling automation platforms, such as Tecan *FLUENT* systems.
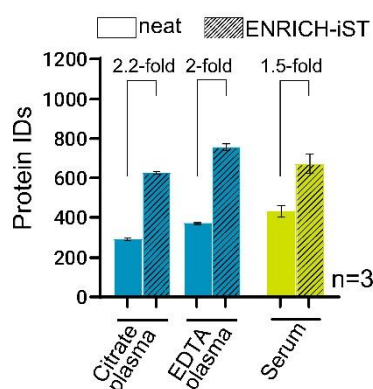

Fig. 1: For both human plasma and serum samples, a significant increase in peptide and protein identification was observed, comparing neat plasma and serum with enriched samples.

Fig. 2: *ENRICH-iST* Kit (displayed in environmentally friendly packaging) is available as an 8x version or as a 96x version for high-throughput plasma proteomics.

Dr. Andreas-David Brunner, Drug Discovery Sciences, Boehringer Ingelheim Pharma GmbH & Co. KG, states: *"We routinely work with biofluid cohorts collected from preclinical species. The novel ENRICH technology from PreOmics allowed us to achieve reliable and in-depth proteomic data without laborious method development. The new kit worked out of the box; the workflow is intuitive and can be completely automated. This solution allows us to standardize our processes completely, and significantly improves our throughput."*

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In a benchmark study, plasma and serum samples from human, mouse and rat specimens (from suppliers Sigma Aldrich, BioIVT and Diaserve Laboratories GmbH) were processed using the novel ENRICH-iST workflow in comparison to antibody-based depletion, as well as to unprocessed neat samples. Peptides were analyzed on a *timsTOF HT* mass spectrometer (Bruker Daltonics) in DIA-PASEF mode using a 30-minute nanoLC gradient. The ENRICH-iST workflow was shown to increase the proteomic depth of peptides and proteins 1.5x – 2.2x -fold in comparison to neat samples. Typical Coefficients of Variation (CV) within replicates were below 12%, emphasizing high repeatability of the ENRICH-iST workflow. Matching the identified proteins with the plasma proteome database revealed a superior coverage for the ENRICH-iST workflow over neat and depleted samples with identified proteins covering a larger dynamic range. ENRICH-iST showed higher precision over the measured abundance range in comparison to the depletion workflow.

Dr. Catherine Nury, Manager Proteomics, Philip Morris International, Switzerland, comments: *"We tested several options for biomarker discovery on plasma samples, but many were long and tedious. With the novel ENRICH technology, we have a fast, efficient, and reliable enrichment workflow to get deeper into the proteome from human plasma and serum. We use the ENRICH-iST 96x kits and are delighted by the reproducibility and ease of the kit. We really enjoyed working with the PreOmics team, who are always there to support us. We would strongly recommend the kit to other plasma and serum proteomics users."*

Automation is key for high-throughput plasma proteomics and **Luca Valeggia, Senior Vice President - Lab Automation, at Tecan**, adds: *"We are delighted to continue our collaboration with PreOmics. By automating their new ENRICH-iST kit on our Fluent workstation, we're enabling robust and reproducible high-throughput sample preparation for large cohort studies, helping to further accelerate progress in this rapidly advancing field."*

Have a look yourself: PreOmics representatives will be at ASMS booth **#827** to showcase the ENRICH-iST application note. Additional information can be accessed at www.preomics.com/products/enrich-ist.

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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