

LC-free MALDI-TOF assay for protein C inhibitor, 9/13

SISCAPA Assay Technologies (SAT) announced publication of a study in Clinical Chemistry demonstrating that one of the company's MALDI-TOF assays for protein C inhibitor can help identify patients at risk for recurrence of prostate cancer after radiotherapy. The assay measures a proteotypic peptide of protein C inhibitor enriched from tryptic digests of patient serum by anti-peptide antibodies (the SISCAPA, or Stable Isotope Standards and Capture by Anti-Peptide Antibodies, workflow), followed by quantitation using simple MALDI-TOF mass spectrometry. A significant post-treatment decline in concentration of the PCI peptide analyte was observed in patients who eventually experienced cancer recurrence.

The publication, entitled "Quantification of a proteotypic peptide from protein C inhibitor by LC-free SISCAPA-MALDI mass spectrometry: application to identification of recurrence of prostate cancer" (2013; July 15. Epub ahead of print), results from collaboration between SAT and Bruker Daltonics to exploit the high precision, throughput, robustness, and ease of use of MALDI-TOF instruments as an alternative to LC-MS technology used in many SISCAPA assays. All SISCAPA-MALDI assays are for research use only.

The sensitivity and precision obtained using the SISCAPA-MALDI-TOF workflow demonstrate effective purification of the target peptides without chromatography, substantially simplifying the measurement of protein biomarkers. The elimination of liquid chromatography separations typically used in mass spectrometric assays greatly decreases the complexity of sample handling and sample introduction, which, together with advances in automated preparation of MALDI target plates, enables large-scale biomarker verification studies currently considered impractical. The published results were obtained using several different MALDI-TOF mass spectrometers, including research-grade instruments using reflectron mode operation, such as Bruker's Autoflex Speed and with a linear only Benchtop Microflex LT instrument.

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