

Novel mass spectrometry based assay reveals degradation and low levels of bioactive B-type natriuretic peptide (BNP) in patients with heart failure

Tempe, AZ October 16, 2008 – A team of researchers from Intrinsic Bioprobes Inc., has reported on a novel quantitative mass spectrometry immunoassay for the detection of bioactive B-type natriuretic peptide (BNP), in an article published online on October 14 in the journal of Circulation: Heart Failure. In collaboration with colleagues from Scios Inc. in Fremont, Christ Hospital in Cincinnati, and Medivation Inc. in San Francisco, the team discovered very low concentration of bioactive BNP in plasma obtained from patients with heart failure, and presented direct structural evidence for several proteolytically degraded forms of BNP in these patients.

“Commercially available assays for immunoreactive BNP do not reflect the bioactivity of the natriuretic peptide system, since they measure both unprocessed, inactive proBNP and mature BNP 1-32”, says Eric Niederkofler, PhD, the principal investigator from Intrinsic Bioprobes. BNP is synthesized as a 108 amino acid propeptide and proteolytically processed to release an inactive 76 amino acid N-terminal fragment and bioactive mature BNP 1-32 into the bloodstream. “This is the first assay capable of detecting and quantifying BNP 1-32 alone. Furthermore, the assay allowed us to study the molecular complexity of BNP degradation, revealing rapid in vitro degradation of BNP 1-32, and necessitating certain preservation protocol during blood collection and subsequent sample handling” adds Niederkofler.

“This work is going to add greater clarity to how clinicians and researchers approach natriuretic peptides and heart failure” says Dr. Roger Mills, from Ortho McNeil Janssen Scientific Affairs. “The results may provide an explanation for the “natriuretic paradox” of increased natriuretic hormone levels with blunted effects in heart failure patients”.

Intrinsic Bioprobes Inc. is a privately held Biotechnology Company focused on developing mass spectrometry-based assays and platforms for rapid and sensitive protein biomarker analysis. The company's proprietary technologies consist of Mass Spectrometric Immunoassay (MSIA™), a high-performance immunoassay combining micro-scale immunoaffinity capture and mass spectrometry for high throughput analysis of proteins from complex biological matrices, and Bioreactive Mass Spectrometer Probes (BRP™), devices for rapid, sensitive and accurate protein characterization. These root technologies are incorporated into the MASSAY™ System, a high throughput mass spectrometry platform for rapid proteome analysis. For more information about Intrinsic Bioprobes Inc., please visit <http://www.intrinsicbio.com>.

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