Analytical Instrumentation, Methods & Materials

Mass Defect-Based Multiplex Dimethyl Pyrimidinyl Ornithine (DiPyrO) Tags for High-Throughput Quantitative Proteomics and Peptidomics

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The Wisconsin Alumni Research Foundation is seeking commercial partners interested in developing a novel type of multiplexed quantification tag for high-throughput quantitative proteomics and peptidomics. Dimethyl pyrimidinyl ornithine (DiPyrO) tags, which are compact and easy to synthesize at high purity in just a few steps using commercially available starting materials, enable 10-plex quantification for proteomics and peptidomics as well as applications in glycan and metabolite quantification.

The Invention

UW-Madison researchers have developed a novel type of mass defect-based chemical tag for use in quantitative mass spectrometry analyses of proteins, peptides, glycans and metabolites. Mass defect-based quantification allows reliable measurements without increasing the spectral complexity of MS1 scans. DiPyrO tags require just a few steps for synthesis with high chemical purity using affordable commercial reagents. These amine-reactive chemical tags provide >99% labeling efficiency for peptide and protein applications and have also been applied for glycan and metabolite labeling. The incorporation of carefully selected stable isotopes facilitates up to 10-plex quantification using Orbitrap or FT-ICR platforms.

Additional Information

For More Information About the Inventors

- Lingjun Li

Tech Fields

- Analytical Instrumentation, Methods & Materials : Mass spectrometry

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854