Analytical Instrumentation, Methods & Materials

A NONIONIC, REDOX-CLEAVABLE SURFACTANT FOR MASS SPECTROMETRY-BASED PROTEOMICS AND STRUCTURAL BIOLOGICAL APPLICATIONS

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Inventors: Ying Ge, Kyle Brown, Song Jin, Morgan Gugger

The Invention

UW-Madison researchers have developed a nonionic cleavable surfactant (NCS) for mass spectrometry (MS)-based proteomics and analysis. Specifically, NCS was designed and synthesized to include a cleavable disulfide bond between a hydrophilic head group and a hydrophobic tail. Upon exposure to a reducing agent (or suitable collisional or electron based fragmentation technique) the disulfide bond is cleaved, thereby releasing the hydrophilic head and hydrophobic tail (i.e., cleavage products). The cleavage products are more easily removed/separated from the solution prior to MS analysis, or if not removed, reduce MS interference when compared to existing surfactants (e.g., n-dodecyl-beta-d-maltoside (DDM), the most commonly used surfactant in structural biology). Further, NCS was designed to limit denaturation of proteins and polypeptides, resulting in a more accurate, relevant, and robust analysis.

Additional Information

For More Information About the Inventors

- Song Jin

Tech Fields

- Analytical Instrumentation, Methods & Materials : Mass spectrometry
- Analytical Instrumentation, Methods & Materials : Reagents

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