BMSO: A Novel Sulfoxide-Containing Cleavable Cysteine Crosslinker

Tech ID: 33945 / UC Case 2019-658-0

BRIEF DESCRIPTION

BMSO represents a groundbreaking advancement in crosslinking mass spectrometry (XL-MS), enabling comprehensive mapping of protein-protein interactions.

FULL DESCRIPTION

BMSO, or bis-maleimide sulfoxide, is a cutting-edge cysteine-reactive crosslinker designed to enhance the identification of cysteine crosslinked peptides in protein-protein interaction (PPI) studies. By incorporating a sulfoxide-containing spacer arm that is mass spectrometry (MS)-cleavable, BMSO enables straightforward and unambiguous identification of crosslinked peptides, significantly advancing the capabilities of crosslinking mass spectrometry (XL-MS) for studying complex protein architectures and interactions.

SUGGESTED USES

- Proteomics research for detailed protein interaction mapping.
- Structural biology for elucidating protein complex architectures.
- Drug discovery and development for identifying potential therapeutic targets.
- Biomedical research for understanding disease mechanisms at the molecular level.

ADVANTAGES

- First-generation cysteine-reactive crosslinker with mass spectrometry (MS) cleavability.
- Facilitates unambiguous identification of cysteine cross-linked peptides.
- Enables comprehensive mapping of protein-protein interactions (PPIs).
- Complements existing lysine- and acidic residue-targeting crosslinkers.
- Performs well in complex biological samples due to MS-cleavable design.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,603,352	03/14/2023	2019-658

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Bioinformatics
  - Proteomics
- **Materials & Chemicals**
  - Chemicals
- **Medical**
  - Research Tools
- **Research Tools**
  - Bioinformatics

RELATED CASES

2019-658-0

RELATED MATERIALS

» Gutierrez, C. B., et al. Rychnovsky, S. D., Huang, L. (2018). Development of a Novel Sulfoxide-Containing MS-Cleavable Homobifunctional Cysteine-Reactive Cross-Linker for Studying Protein–Protein Interactions. Anal. Chem. 90 (12).

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