New Sulfoxide-Containing MS-Cleavable Cross-Linker for Proteomics

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Health
  - Other
  - Proteomics

RELATED CASES

2023-735-0

BRIEF DESCRIPTION

An innovative sulfoxide-containing MS-cleavable cross-linker, DBrASO, specifically designed for cysteine residues and aimed at enhancing protein-protein interactions studies and protein complexes architecture analysis.

APPLICATIONS

Studies of protein-protein interactions

Protein complex architecture elucidation

Complementing existing lysine-reactive cross-linkers in proteomics studies

Potential utility in quantitative XL-MS studies

ADVANTAGES

Specific target on cysteine residues

Improved specificity at physiological pH

Non-hydrolyzable bromoacetamide groups

Production of homogeneous cross-linked products

Effective for global XL-MS analysis

Problems Solved:

- Fills the existing gap in XL-MS analysis
- Enables unambiguous identification of cross-linking by carrying the same MS-cleavable
- characteristics as other sulfoxide-containing MS-cleavable cross-linkers
- Overcomes the issue of hydrolyzability associated with other cross-linkers

DESCRIPTION

This technology involves the development of DBrASO, a new sulfoxide-containing, MS-cleavable, cysteinereactive cross-linker. It features bromoacetamide groups providing improved specificity, non-hydrolyzability and homogeneous cross-linked products. The product is designed for unambiguous cross-link identification and has been seen to effectively work on simple and complex samples. DBrASO represents a breakthrough product in proteomics studies, offering a comprehensive solution for protein interaction mapping on a systems-level basis.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20240353418	10/24/2024	2023-735

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- New Cross-Linking Mass Spectrometry Platform: SDASO-L, SDASO-M, and SDASO-S
- New Collision-Induced Dissociation Cross Linker and Related Software Package for Fast and Accurate Mass Spectrometry Analysis of Proteins

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