Cross-Linkers to Advance Protein-Protein Interaction Studies

Tech ID: 33881 / UC Case 2023-808-0

BRIEF DESCRIPTION

A novel suite of trioxane-based, MS-cleavable cross-linking reagents enhancing protein-protein interaction studies.

FULL DESCRIPTION

This technology introduces sulfoxide-containing, MS-cleavable cross-linking reagents with a trioxane cleavable site, designed to improve the study of protein-protein interactions (PPIs). It allows for a more flexible cross-linker design and enhances the capture of PPIs in 3-D space, facilitating the robust identification of cross-linked peptides and providing insights into the architecture of protein complexes without cell engineering.

SUGGESTED USES

- Structural biology research and protein complex architecture elucidation.
- Drug discovery by targeting specific protein-protein interactions.
- Biotechnological advancements in understanding cellular functionality and physiological states.
- Development of novel therapeutic strategies based on the mechanistic functions of protein complexes.

ADVANTAGES

- MS-Cleavable Homotrifunctional Cross-Linker, allowing for unique MS-cleavability and unambiguous identification by mass spectrometry.
- Enables the capture of endogenous protein-protein interactions without cell engineering.
- Provides distance constraints at specific residues, aiding in the refinement of protein structures.
- Improves flexibility in cross-linker design with trioxane's multiple extension sites.
- Facilitates the identification of cross-linked peptides containing three individual peptides, offering additional structural information.
- Ensures robust MS-cleavability for simplified identification in multistage tandem mass spectrometry analysis workflows.
- Trioxane Core Structure enables the development of cross-linkers targeting other residues and allows for bifunctional reactive groups plus an enrichment handle.

PATENT STATUS

Patent Pending

CONTACT

Richard Y. Tun
tunr@uci.edu
tel: 949-824-3586.

OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Research Tools
- **Research Tools**
  - Other

RELATED CASES

2023-808-0

UCI Beall
Applied Innovation

5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683