Proximity-Enhanced NHSF Crosslinker: A Breakthrough Technology for Precise Protein Interaction Mapping and Structural Analysis

Tech ID: 34433 / UC Case 2019-016-0

TECHNOLOGY DESCRIPTION

Researchers at UCSF have developed a next-generation chemical cross-linker, NHSF, designed for advanced cross-linking mass spectrometry (CXMS) applications. This innovative tool enables scientists to study complex protein structures and interactions with unprecedented precision. NHSF uses a unique dual-function design to specifically target multiple amino acids, including Lys, His, Ser, Thr, and Tyr, through proximity-enhanced sulfur-fluoride exchange (SuFEx) reactions. Currently in the proof-of-concept stage, NHSF has been successfully tested on model proteins and biological samples to demonstrate its capabilities. Unlike traditional cross-linkers, which are limited to targeting Lys, Cys, Asp, and Glu, NHSF expands the scope of CXMS by offering multi-targeting functionality, reducing non-specific crosslinking, and providing structural insights that are highly compatible with protein models. This technology has the potential to transform structural biology, proteomics, and drug discovery by addressing challenges in studying weak and transient protein interactions.

STAGE OF DEVELOPMENT

proof-of-concept

RELATED MATERIALS

- Proximity-enhanced SuFEx chemical cross-linker for specific and multitargeting cross-linking mass spectrometry - 08/07/2018

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,493,045	12/09/2025	2019-016

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OTHER INFORMATION

CATEGORIZED AS

- Research Tools
  - Nucleic Acids/DNA/RNA
  - Other

RELATED CASES

2019-016-0

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