

REDOX-BASED REAGENTS FOR METHIONINE BIOCONJUGATION

Tech ID: 27148 / UC Case 2017-061-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,353,463	06/07/2022	2017-061

BRIEF DESCRIPTION

This invention relates to Redox-Based Reagents for Methionine Bioconjugation, which achieve chemoselective conjugation through redox reactivity. The process involves reacting an N-transfer oxidant with a thioether substrate in an aqueous environment to form a conjugation product. Specifically, Redox-Activated Chemical Tagging (ReACT) strategies are employed for methionine-based protein functionalization. Oxaziridine (Ox) compounds serve as oxidant-mediated reagents for direct functionalization by converting methionine to the corresponding sulfimide conjugation product.

SUGGESTED USES

- Protein Functionalization: Enhancing or modifying protein functions for research and therapeutic applications.
- Bioconjugation: Creating conjugates for drug delivery, imaging, or diagnostic purposes.
- Biomarker Detection: Developing sensitive assays for detecting methionine-containing proteins.
- Synthetic Biology: Engineering proteins with novel functionalities for various biotechnological applications.
- Chemical Biology: Studying protein interactions and functions through targeted modifications.

ADVANTAGES

- Chemoselectivity: Achieves specific conjugation at methionine residues without affecting other amino acids.
- Efficiency: Redox reactivity in aqueous environments ensures rapid and effective conjugation.
- Versatility: Applicable to a wide range of proteins and peptides.
- Precision: Oxaziridine compounds enable direct and controlled functionalization.
- Biocompatibility: Suitable for use in biological systems without adverse effects.

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- [Asymetric Electrophilic Fluorination Using An Anionic Chiral Phasee-Transfer Catalyst](#)

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OTHER INFORMATION

CATEGORIZED AS

» **Biotechnology**

» Other

» Proteomics

» **Medical**

» Delivery Systems

» Diagnostics

» Imaging

» **Research Tools**

» Other

» Protein Synthesis

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