Biotin BCN

Catalog Number: 70650
Unit Size: 1 mg

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	

Chemical Properties

Appearance	Solid
Molecular Weight	N/A
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	N/A
Emission Wavelength	N/A

Applications

Biotin BCN is a clickable derivative of biotin designed for efficient, catalyst-free conjugation to azide- or tetrazine-functionalized molecules. Biotin serves as a high-affinity ligand for avidin and streptavidin, enabling robust and specific capture, detection, and immobilization of biotinylated targets. This reagent is particularly suited for site-specific labeling of azide- or tetrazine-modified proteins, peptides, glycans, and nucleic acids under physiological conditions. Typical applications include pull-down and affinity purification assays leveraging the biotin–streptavidin interaction, as well as the visualization, enrichment, or quantitative analysis of biomolecules in complex biological samples.

To improve conjugation performance, biotin BCN incorporates a PEG spacer, which reduces steric hindrance and minimizes potential interference with target binding sites. This design maximizes conjugation efficiency while preserving the biological activity of the resulting conjugate. The bicyclononyne (BCN) moiety enables strain-promoted azide–alkyne cycloaddition (SPAAC) with azido groups, forming stable triazole linkages under catalyst-free conditions. In addition, unlike dibenzocyclooctyne (DBCO), BCN also reacts efficiently with tetrazines through an inverse electron-demand Diels–Alder (IEDDA) reaction. This reaction is rapid, selective, and bioorthogonal, allowing labeling of biomolecules under physiological conditions without the need for metal catalysts or disruption of native biological processes.