6-TET BCN

Catalog Number: 70524
Unit Size: 1 mg

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	24 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	N/A
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	521 nm
Emission Wavelength	542 nm

Applications

6-TET BCN is a clickable derivative of 6-Carboxy-2',4,7',7-tetrachlorofluorescein (6-TET), a widely used green fluorescent dye for biomolecule labeling, particularly oligonucleotides. Spectrally, 6-TET is similar to VIC, JOE, and R6G, and is frequently employed in molecular biology and biotechnology for sensitive labeling and detection applications. The incorporation of a PEG spacer in 6-TET BCN helps reduce steric hindrance and minimizes potential interference with target binding sites, thereby enhancing conjugation efficiency and preserving the functionality of the 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.