XFD750 BCN

Catalog Number: 70612
Unit Size: 1 mg

Product Details

Storage Conditions	Freeze (< -15 °C), Minimize light exposure
Expiration Date	12 months upon receiving

Chemical Properties

Appearance	Solid
Molecular Weight	N/A
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	752 nm
Emission Wavelength	776 nm

Applications

XFD750 BCN, a clickable derivative of XFD750, is a bright near-infrared fluorescent dye used for labeling peptides, oligonucleotides, and other biomolecules via click chemistry. Structurally similar to Alexa Fluor™ 750 (Thermo Fisher Scientific), it is readily excited by the 633 nm laser line and is compatible with the Cy7 filter set, making it well-suited for applications in fluorescence microscopy and flow cytometry. The dye demonstrates excellent aqueous solubility and maintains pH stability across a broad range (pH 4–10), ensuring reliable and reproducible fluorescence signals under diverse experimental conditions. XFD750 is particularly useful in stochastic optical reconstruction microscopy (STORM).

To improve conjugation performance, XFD750 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.