6-JOE BCN

Catalog Number: 70523
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	520 nm
Emission Wavelength	545 nm

Applications

6-JOE BCN is a clickable derivative of 6-Carboxy-4',5'-dichloro-2',7'-dimethoxyfluorescein (6-JOE) widely used for labeling biomolecules such as oligonucleotides. 6-JOE is a popular yellow-green fluorescent dye known for its strong fluorescence, high photostability, and minimal pH sensitivity within the physiological range. To improve bioconjugation performance, it incorporates a PEG spacer that reduces steric hindrance and minimizes interference from the binding site 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.