

XFD647 PEG4 DBCO

Catalog Number: 1734

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	650 nm
Emission Wavelength	671 nm

Applications

XFD647, manufactured by AAT Bioquest, is a bright far-red fluorescent dye structurally similar to Alexa Fluor™ 647 (Thermo Fisher). It is efficiently excited by the 594 nm or 633 nm laser lines and is compatible with RFP filters like Cy5, making it well-suited for applications such as fluorescence microscopy and flow cytometry. XFD647 exhibits excellent aqueous solubility and pH stability across a wide range (pH 4–10), ensuring robust signal reproducibility under diverse experimental conditions. The dye enables high-degree conjugation to biomolecules with minimal self-quenching, resulting in enhanced fluorescence intensity and signal stability. Additionally, its high fluorescence quantum yield and superior photostability facilitate the sensitive detection of low-abundance targets, enhancing precision and sensitivity in quantitative fluorescence-based assays.

The DBCO derivative of XFD647 is a highly reactive cycloalkyne optimized for copper-free click chemistry (SPAAC, strain-promoted azide-alkyne cycloaddition). This derivative exhibits a significantly higher reaction rate with azides compared to other cycloalkynes and copper-catalyzed click reactions (CuAAC). Uniquely, DBCO does not react with tetrazines, allowing for its use in bioorthogonal reactions alongside trans-cyclooctenes and tetrazines. For applications where the presence of copper is problematic, XFD647 DBCO serves as an effective alternative to copper-dependent fluorescent alkynes.