

XFD555 PEG4 DBCO

Catalog Number: 1725

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	553 nm
Emission Wavelength	568 nm

Applications

XFD555, manufactured by AAT Bioquest, is structurally similar to Alexa Fluor™ 555 (Thermo Fisher). It is a bright orange-fluorescent dye with an excitation optimized for use with either the 488 nm line of the argon-ion laser or the 532 nm line of the frequency-doubled Nd:YAG laser. The high fluorescence quantum yield and high photostability of XFD555 allow for the detection of low-abundance biological structures with great sensitivity. XFD555 demonstrates good aqueous solubility and pH-insensitivity over a broad pH range (pH 4–10), ensuring stable fluorescence generation under varying experimental conditions. XFD555 dye molecules can be attached to proteins at high molar ratios without significant self-quenching, enabling brighter conjugates and more sensitive detection in imaging and flow cytometry.

The DBCO derivative of XFD555 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 cyclooctynes 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, XFD555 DBCO serves as an effective alternative to copper-dependent fluorescent alkynes.