

XFD514 PEG4 DBCO

Catalog Number: 70046

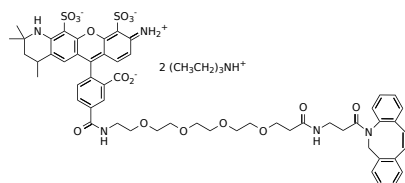
Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid
Molecular Weight	1324.61
Soluble In	DMSO
Chemical Structure	



Spectral Properties

Excitation Wavelength	518 nm
Emission Wavelength	543 nm

Applications

XFD514, manufactured by AAT Bioquest, is a bright green-fluorescent dye that is structurally identical to Alexa Fluor[®] 514 (ThermoFisher). With optimal excitation between 480-535 nm, it is ideally compatible with the 488 nm line of the Argon-Ion laser and the 532 nm line of the frequency-doubled Nd:YAG laser. XFD514 demonstrates enhanced water solubility due to the incorporation of a PEG4 linker and remains stable over a wide pH range (pH 4–10), providing consistent and robust fluorescence signals. These properties make it highly suitable for advanced imaging techniques such as fluorescence microscopy and flow cytometry. XFD514 is a suitable replacement for rhodamine 6G.

The DBCO derivative of XFD514 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, XFD514 DBCO serves as an effective alternative to copper-dependent fluorescent alkynes.