ATTO 655 PEG4 DBCO

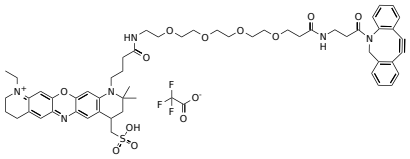
Catalog Number: 70285
Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid
Molecular Weight	1147.27
Soluble In	DMSO
Chemical Structure	



Spectral Properties

Excitation Wavelength	661 nm
Emission Wavelength	679 nm

Applications

ATTO 655 is a far-red fluorescent dye characterized by its strong absorption, high photo and thermal stability, and excellent ozone resistance. The dye exhibits enhanced aqueous solubility due to the incorporation of a PEG4 spacer and is optimally excited within the 640-660 nm wavelength range, which aligns with the 647 nm line of Krypton-Ion lasers and the 650 nm line of diode lasers. As a zwitterionic compound, ATTO 655 remains electrically neutral when conjugated to biomolecules or other substrates. Its strong electron-accepting properties result in efficient fluorescence quenching by electron donors such as guanine and tryptophan. These properties render ATTO 655 highly suitable for precise applications including single-molecule detection and super-resolution microscopy techniques like PALM, dSTORM, and STED. Furthermore, ATTO 655 is compatible with flow cytometry (FACS), fluorescence in situ hybridization (FISH), and a variety of other biological assays, making it a versatile tool in advanced fluorescence-based research. The PEG4-DBCO derivative of ATTO 655 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, ATTO 655 PEG4 DBCO serves as an effective alternative to copper-dependent fluorescent alkynes.</p>