

AATOM™ 655 PEG4 DBCO

Catalog Number: 70285

Unit Size: 1 mg

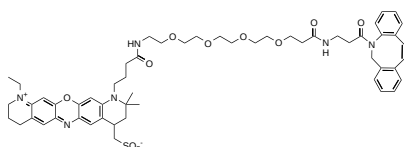
Product Details

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

Chemical Properties

Appearance	Solid dark blue
Molecular Weight	1033.25
Soluble In	DMSO

Chemical Structure



Spectral Properties

Excitation Wavelength	661 nm
Emission Wavelength	679 nm

Applications

AATOM™ 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, AATOM™ 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 AATOM™ 655 highly suitable for precise applications including single-molecule detection and super-resolution microscopy techniques like PALM, dSTORM, and STED. Furthermore, AATOM™ 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 AATOM™ 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, AATOM™ 655 PEG4 DBCO serves as an effective alternative to copper-dependent fluorescent alkynes. This product is manufactured by AAT Bioquest and is not affiliated with ATTO-TEC GmbH.