AATOM™ 647 PEG4 DBCO

Catalog Number: 2832
Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid blue
Molecular Weight	1098
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	646 nm
Emission Wavelength	666 nm

Applications

AATOM™ 647 is a rhodamine-derived fluorescent dye optimized for applications within the red spectral region, offering spectral characteristics similar to Cy5. Its characterized by a high molar absorptivity, robust fluorescence quantum yield, high photostability, and good aqueous solubility, making it well-suited for demanding experimental conditions. The dye is highly hydrophilic, with an excitation maximum between the 615-660 nm range, making it compatible with the 633 nm He:Ne laser, 647 nm Krypton-Ion laser, and 650 nm diode laser. As a zwitterionic molecule, AATOM™ 647 carries a net neutral charge. The dye is stable under physiological pH conditions and in buffers with a pH of up to 8, though it gradually degrades at higher pH levels. AATOM™ 647 is ideal for advanced applications in single-molecule detection and high-resolution microscopy techniques, including PALM, dSTORM, and STED microscopy. It is also compatible with flow cytometry (FACS), fluorescence in situ hybridization (FISH), FRET, and various other biological assays.

The DBCO derivative of AATOM™ 647 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™ 647 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.