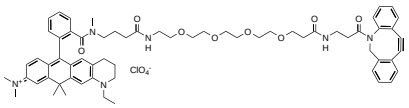
AATOM™ 633 DBCO

Catalog Number: 70275
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	1157.80
Soluble In	DMSO
Chemical Structure	

Spectral Properties

Excitation Wavelength	629 nm
Emission Wavelength	651 nm

Applications

AATOM™ 633 is a bright-red fluorescent dye, characterized by its strong absorption, high fluorescence quantum yield, and exceptional photo and thermal stability. It exhibits moderate hydrophilicity and is optimally excited within the 610-645 nm wavelength range, compatible with both the 633 nm line of the He-Ne laser and the 635 nm line of the diode laser. The dye maintains stable fluorescence over a wide pH range (2-11), allowing for its use in diverse experimental conditions. Upon conjugation to a substrate, AATOM™ 633 becomes cationic, carrying a net positive charge of +1. These properties make AATOM™ 633 particularly suitable for high-precision applications, including single-molecule detection and super-resolution microscopy techniques such as PALM, dSTORM, and STED. Additionally, it is compatible with flow cytometry (FACS), fluorescence in situ hybridization (FISH), and various other biological assays.

The DBCO derivative of AATOM™ 633 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™ 633 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.

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