

AATOM™ 590 DBCO

Catalog Number: 70245

Unit Size: 1 mg

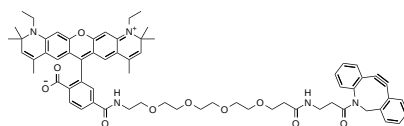
Product Details

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

Chemical Properties

Appearance	Solid dark purple
Molecular Weight	1096.31
Soluble In	DMSO

Chemical Structure



Spectral Properties

Excitation Wavelength	592 nm
Emission Wavelength	621 nm

Applications

AATOM™ 590 is a rhodamine-based fluorescent dye characterized by its strong absorption, high fluorescence quantum yield, and excellent photostability and thermal stability. It exhibits moderate hydrophilicity and is optimally excited within the 575-610 nm wavelength range. AATOM™ 590 emits in the orange-red region of the visible spectrum, with fluorescence effectively quenched by BHQ®-2 dye. This dye is particularly suited for advanced applications in single-molecule detection and high-resolution microscopy techniques such as PALM, dSTORM, and STED microscopy. Additionally, it is compatible with flow cytometry (FACS), fluorescence in situ hybridization (FISH), FRET, and various other biological assays. AATOM™ 590 is a suitable alternative to Alexa Fluor® 594 for these applications.

The DBCO derivative of AATOM™ 590 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 cycloalkynes 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™ 590 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.