AATOM™ 550 BCN

Catalog Number: 70558
Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid red
Molecular Weight	988.28
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	553 nm
Emission Wavelength	574 nm

Applications

AATOM™ 550 BCN is a clickable derivative of AATOM™ 550, an orange fluorescent dye designed for labeling peptides, oligonucleotides, and other biomolecules. AATOM™ 550 is known for its strong absorption, high fluorescence quantum yield, and excellent photostability and thermal stability. This dye exhibits moderate hydrophilicity, with an optimal excitation range of 540-565 nm. AATOM™ 550 is cationic and carries a net electrical charge of +1 after coupling to a substrate. This dye is well-suited 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), and a variety of other biological assays.

To improve conjugation performance, AATOM™ 550 BCN incorporates a PEG spacer, which reduces steric hindrance and minimizes potential interference with target binding sites. This design maximizes conjugation efficiency while preserving the biological activity of the resulting conjugate. The bicyclononyne (BCN) moiety enables strain-promoted azide–alkyne cycloaddition (SPAAC) with azido groups, forming stable triazole linkages under catalyst-free conditions. In addition, unlike dibenzocyclooctyne (DBCO), BCN also reacts efficiently with tetrazines through an inverse electron-demand Diels–Alder (IEDDA) reaction. This reaction is rapid, selective, and bioorthogonal, allowing labeling of biomolecules under physiological conditions without the need for metal catalysts or disruption of native biological processes. This product is manufactured by AAT Bioquest and is not affiliated with ATTO-TEC GmbH.