AATOM™ 594 BCN

Catalog Number: 70561
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	N/A
Soluble In	DMSO

Spectral Properties

Excitation Wavelength	602 nm
Emission Wavelength	621 nm

Applications

AATOM™ 594 BCN is a clickable derivative of AATOM™ 594, a red fluorescent dye designed for labeling peptides, oligonucleotides, and other biomolecules. AATOM™ 594 is known for its strong absorption, high fluorescence quantum yield, and excellent thermal and photo-stability. It is optimally excited within the 560-615 nm range, making it compatible with both 561 nm and 594 nm laser lines commonly used in advanced fluorescence imaging systems. Upon conjugation to biomolecules, AATOM™ 594 becomes anionic, carrying a net charge of -1, which may influence its binding characteristics and performance in assays. Its photostability and brightness make it particularly suited for high-resolution techniques like single-molecule detection and super-resolution microscopy, including PALM, dSTORM, and STED. 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™ 594 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.