

AATOM™ 647N NHS ester

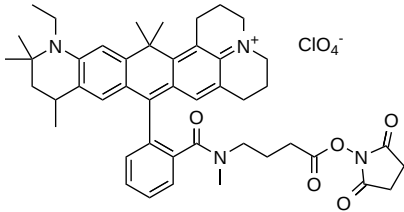
Catalog Number: 2856

Unit Size: 1 mg

Product Details

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

Chemical Properties

Appearance	Solid blue
Molecular Weight	843.42
Soluble In	DMSO
Chemical Structure	

Spectral Properties

Excitation Wavelength	645 nm
Emission Wavelength	663 nm

Applications

AATOM™ 647N is a rhodamine-based fluorescent dye optimized for use in the red spectral region, with similar spectral characteristics as Cy5. It is characterized by high molar absorptivity, a strong fluorescence quantum yield, and excellent thermal and photostability. The dye is moderately hydrophilic and exhibits optimal excitation within the 625-660 nm range, making it compatible with the 647 nm line of Krypton-Ion lasers and the 650 nm line of diode lasers. AATOM™ 647N maintains stable fluorescence across a broad pH range (pH 2-11), supporting its application under diverse experimental conditions. Upon conjugation to a substrate, the dye becomes cationic, carrying a net positive charge of +1. Unlike cyanine dyes, AATOM™ 647N demonstrates enhanced resistance to atmospheric ozone degradation, which increases its reliability in microarray applications. AATOM™ 647N is particularly effective for high-precision applications such as single-molecule detection, super-resolution microscopy techniques (e.g., SIM and STED), flow cytometry (FACS), fluorescence in situ hybridization (FISH), and various other biological assays.

The N-hydroxysuccinimidyl (NHS) ester of AATOM™ 647N is a widely used reagent for the conjugation of this dye to proteins or antibodies. NHS esters react selectively and efficiently with primary amines (such as the side chains of lysine residues or aminosilane-coated surfaces) at pH 7-9, forming stable covalent amide bonds. This property makes AATOM™ 647N NHS ester an excellent choice for labeling proteins, amine-modified oligonucleotides, and other amine-containing molecules. This product is manufactured by AAT Bioquest and is not affiliated with ATTO-TEC GmbH.