# AATOM™ 590 NHS ester

Catalog Number: 70241
Unit Size: 1 mg

## Product Details

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

## Chemical Properties

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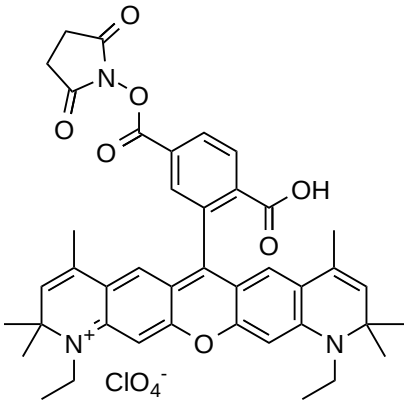
|---|---|
| Appearance | Solid dark red |
| Molecular Weight | 788.25 |
| Soluble In | DMSO |
| Chemical Structure |  |



## Spectral Properties

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|---|---|
| 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 N-hydroxysuccinimidyl (NHS) ester of AATOM™ 590 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™ 590 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.