

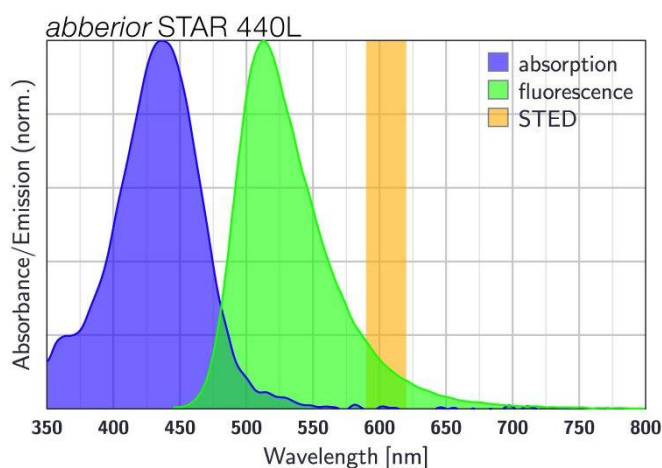
abberior STAR 440L, NHS ester, 1 mg

Item number

ST440L-0002-1MG

Description

abberior STAR 440L is a long Stokes-shift dye optimized for STED and confocal microscopy in the blue-green spectral range. It shows a Stokes-shift of approx. 80 nm. As all long Stokes-shift dyes, it shows a broad excitation and emission band: It can be excited between 400 - 470 nm and emits between 490 - 550 nm. For STED microscopy, abberior STAR 440L can be most efficiently used with STED laser wavelengths between 590 - 610 nm. It is therefore well suited for 2 color (STED) imaging together with our abberior STAR GREEN or abberior STAR 488. The hydrophilic properties of abberior STAR 440L conjugates preclude unspecific binding of this dye and thus decrease undesired background fluorescence. Our abberior STAR 440L can substitute dyes like ATTO® 425 or BD Horizon® V500. abberior STAR 440SXP has been renamed abberior STAR 440L. The structure of the dye has not changed. Best results are obtained with freshly prepared samples.



The NHS ester is a widespread tool for conjugating a fluorescent dye to a protein or antibody. NHS ester can be used to label primary amines of proteins or amine-modified molecules. The resulting abberior conjugate will show a bright fluorescence and photostability. abberior offers protocols for labeling antibodies via amine-reactive groups.

Properties

Absorption	λ_{ex} [nm]	432
Extinction Coefficient	ϵ_{max} [M ⁻¹ cm ⁻¹]	33000
Emission	λ_{em} [nm]	511
Quantum Efficiency	η_{fl} [%]	57
STED min.	$\lambda_{\text{STED min}}$ [nm]	590
STED max.	$\lambda_{\text{STED max}}$ [nm]	610
Fluorescence Lifetime	τ_{fl} [ns]	3.7
Correction Factor 260	CF ₂₆₀	0.47
Correction Factor 280	CF ₂₈₀	0.31
Charge	Δq	0
Molecular Weight	MW [g/mol]	625.6
Derivative/Conjugate	NHS ester	

Photophysical properties were measured for carboxylic acid in PBS pH 7.4.

Storage

The product contains a vial of dried, solid substance and is shipped at room temperature. Upon arrival, the product can be stored at -20 °C to -80 °C for long-term storage of up to one year. The conjugate should be protected from direct light exposure and repeated freeze-thaw cycles should be avoided.

- Depending on solvent quality the shelf-life of the NHS solution might be significantly reduced compared to the NHS in its solid form – even if stored at -20 °C. Our abberior NHS ester and carbonate are freeze-dried and should be dissolved only shortly before the coupling reaction. Recommended solvents include amine- and water-free DMF, DMSO, or acetonitrile.