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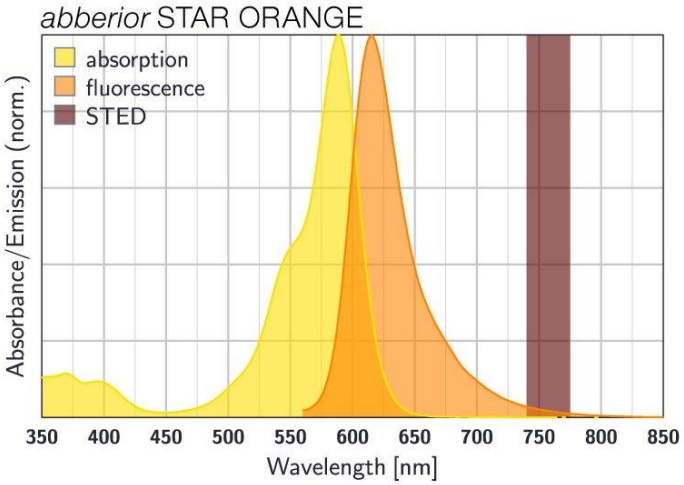
abberior STAR ORANGE, nanobody FluoTag®-X2 anti-Rabbit IgG, 500 µL (5 µM)

Item number

N2402-AbORANGE-S

Description

abberior STAR ORANGE is a novel fluorescent dye developed for STED and confocal microscopy in the orange spectral region. Introducing negatively charged groups into its molecular structure making the dye excellently water soluble and enables background-free imaging. Thus, abberior STAR ORANGE is highly photostable and a bright orange fluorescent dye, which can be effectively excited with excitation light between 550 - 610 nm. For STED microscopy, this dye can be most efficiently used with a STED laser wavelength between 750 - 800 nm. Our abberior STAR ORANGE can substitute dyes like ATTO® 594 or Alexa Fluor® 594. Together with our abberior STAR RED you can obtain stunning 2 color STED results. In combination with our abberior STAR 580 you get the ideal pair for FLIM experiments. Best results are obtained with freshly prepared samples.



Secondary single-domain antibodies (sdABs), also known as nanobodies, represent an innovative and promising antibody format. At just 15 kDa, sdABs are 10 times smaller than conventional whole IgG antibodies, making them ideal for high-resolution imaging applications that require small labels, excellent tissue penetration, and exceptional specificity. The combination of abberior STAR dyes – known for their superior brightness and photostability – with secondary sdABs (FluoTag®-X2) from NanoTag Biotechnologies provides an exceptional solution for high-quality, high-resolution imaging. FluoTag®-X2 sdABs, developed by NanoTag Biotechnologies, bind with high affinity and specificity to a distinct epitope on rabbit IgG. Due to the inherent symmetry of the target antibody, two secondary nanobodies will be able to bind each primary antibody. The secondary FluoTag®-X2 reagents will therefore target 4 fluorophores to each primary antibody.

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Properties

Absorption	λ_{ex} [nm]	589
Extinction Coefficient	ε_{max} [$M^{-1}cm^{-1}$]	95000
Emission	λ_{em} [nm]	616
Quantum Efficiency	η_{fl} [%]	55
STED min.	$\lambda_{STED\ min}$ [nm]	750
STED max.	$\lambda_{STED\ max}$ [nm]	800
Fluorescence Lifetime	τ_{fl} [ns]	4.5
Correction Factor 260	CF_{260}	0.55
Correction Factor 280	CF_{280}	0.56
Charge	Δq	-3
Derivative/Conjugate		Nanobody anti-rabbit, monoclonal

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

Storage

All fluorescent FluoTag®-X2 monoclonal secondary nanobodies from NanoTag Biotechnologies are lyophilized from PBS pH 7.4 with 2 % BSA (US-Origin) and shipped as lyophilized powder at ambient temperature. The lyophilized reagent can be stored at 2 - 8 °C for up to 12 months. Before usage, reconstitute and aliquot the reagent according to the detailed protocol below. After reconstitution in 500 µL, the final concentration is 10 µM dye and 5 µM nanobody.

- Prepare sterile 50% glycerol (v/v) in deionized water. If applicable, we recommend including 0.1% sodium azide as a preservative. Sodium azide should be avoided when staining live cells or conducting in vivo studies.
- Open the vial containing the lyophilized FluoTag® secondary reagent and add 500 µl of sterile 50 %glycerol (v/v) in deionized water.
- Mix gently and allow to sit at room temperature for approximately 5 min.
- Optional:Briefly spin down the vial for 2 min at 100 x g using a 50 ml conical tube with tissue paper at the bottom.
- Distribute into aliquots. Use small tubes and avoid aliquots below 20 µl.
- Storage: Working aliquot can be stored at -20°C for up to 4 weeks. Ideally store at -80°C (up to 6 months).