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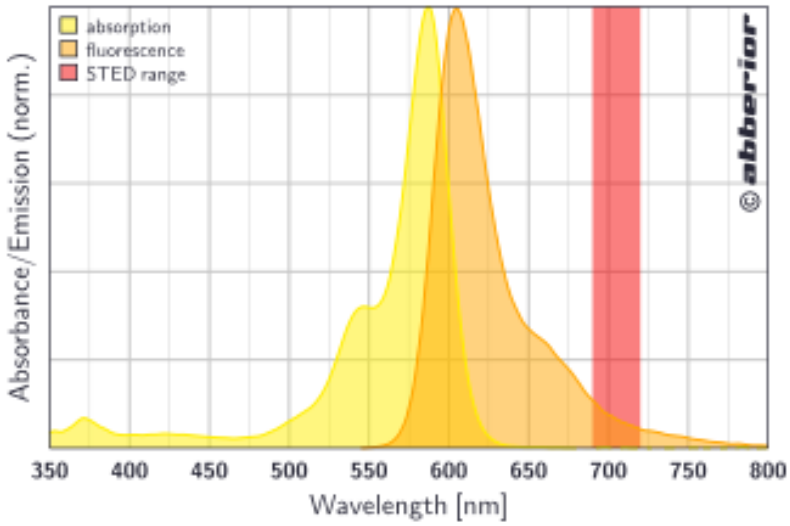
Product Information

52403 Anti-Mouse IgG-Abberior® STAR 580 antibody produced in goat



Key Features

- Exceptionally bright orange fluorescent dye
- Ideal for STEDmicroscopy@700-775nm
- 2-color labeling partner with STAR635P for 2-color STED microscopy

Product Description

Abberior STAR 580 is the latest development for STED microscopy with a fluorescent dye in the orange regime. The dye can be excited from 550 to 590 nm. Abberior STAR 580 can substitute dyes like ATTO® 590/594 or AlexaFluor® 584/594. The dye can most effectively be depleted in STED microscopy at 700 to 775 nm.

Anti-mouse IgG (whole molecule) (Sigma M8890) is developed in goat using purified mouse IgG as the immunogen. Affinity isolated antigen specific antibody is purified from goat anit-mouse IgG antiserum to remove essentially all goat serum proteins, including immunoglobulins, which do not specifically bind to mouse IgG.
The antibody preparation is solid phase adsorbed with human serum proteins to ensure minimal cross reactivity.
Goat anti-mouse is conjugated to Abberior STAR 580 the further purified via gel permeation chromatography and dialysis to remove unbound Abberior dye.

Chemical Data : Abberior® STAR 580

Solubility:	methanol, acetonitrile, DMF, DMSO
Polarity:	moderate lipophilic
Charge:	+1 (NHS, and when conjugated)
Purity:	> 90 %

Photophysical Data : Abberior® STAR 580

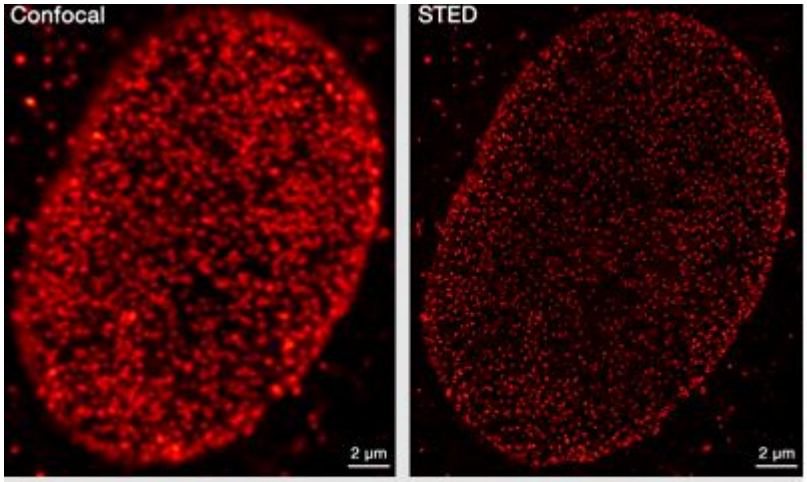
Absorption Maximum, λ_{abs}, nm:	587 (PBS, pH 7.4; water) 584 (MeOH, aq. ACN)
Fluorescence Maximum, λ_{fl}, nm:	607 (PBS, pH 7.4) 604 (MeOH, aq. ACN)
Extinction Coefficient, ε, $M^{-1}cm^{-1}$:	85 000 (PBS, pH 7.4; water) 95 000 (MeOH; aq. ACN)
Correction Factor, $CF_{260} = \varepsilon_{260}/\varepsilon_{max}$:	0.17 (PBS, pH 7.4; water) 0.16 (MeOH; aq. ACN)
Correction Factor, $CF_{280} = \varepsilon_{280}/\varepsilon_{max}$:	0.17 (PBS, pH 7.4; water) 0.15 (MeOH; aq. ACN)
Recommended STED Wavelength, λ_{STED}, nm:	700 – 780
Fluorescence Quantum Yield, η:	0.90 (PBS, pH 7.4)
Fluorescence Lifetime, τ:	3.5 ns (PBS, pH 7.4)

Storage / Stability

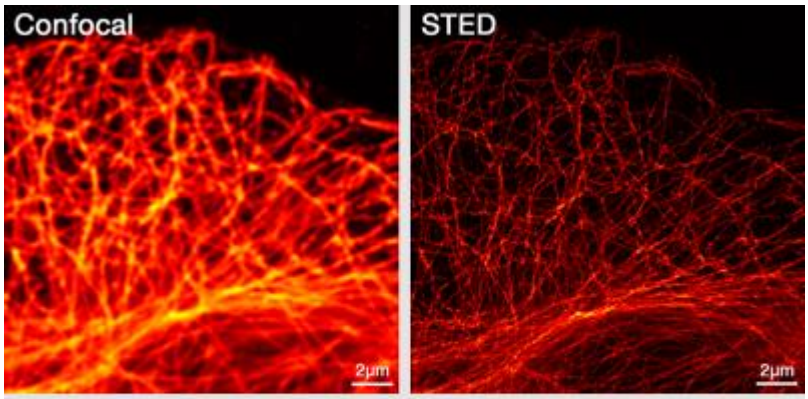
For continuous use, store at 2-8 °C for up to three months. For extended storage, the solution may be frozen in working aliquots at -20 °C. Frozen aliquots are stable for at least six month. Repeated freezing and thawing is not recommended. Storage in *frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Protect fluorescent conjugates from light.

Applications

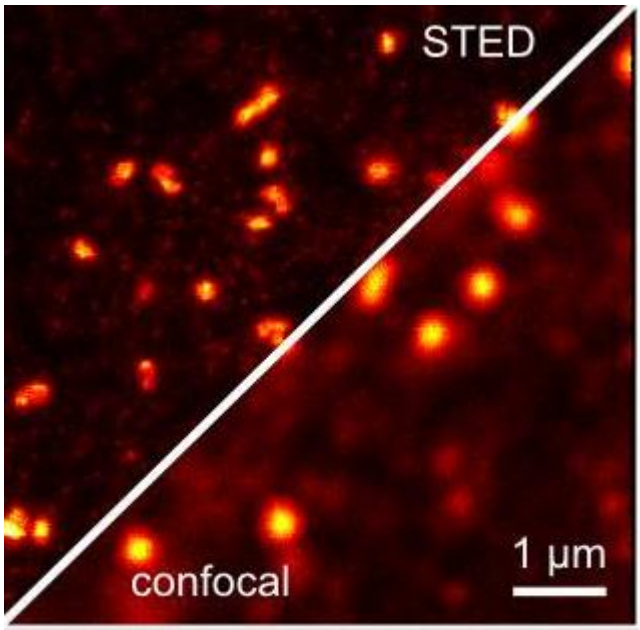
Abberior STAR 580 is the dye of choice for orange fluorescence. Moreover, the dye is particularly designed and tested for **2-color STED microscopy** in combination with Abberior STAR 635 using 2 separate STED wavelength. This offers the great advantage of using 2 regular (not featuring a long Stokes-shift) dyes, which are in general more photostable.



Comparison of confocal and STED (Abberior Instruments STED) image of nuclear pore complexes (nup153) stained with Abberior STAR 580. Both images represent raw data.



Comparison of confocal and STED (Abberior Instruments STED) image of Tubulin stained with STAR 580. Note that both images represent raw data.



Comparison of a STED and confocal microscopy image of peroxisomes - PMP70 obtained with STAR 580 labelling.

Literature

1. F. Balzarotti, F.D. Stefani "Plasmonics Meets Far-Field Optical Nanoscopy" *ACSnano*, 6 (6), 4580–4584 **(2012)**
2. D. Ivanova et al. "Synaptic activity controls localization and function of CtBP1 via binding to Bassoon and Piccolo" *The EMBO Journal* **(2015)**
3. P. Fidzinski et al. "KCNQ5 K+ channels control hippocampal synaptic inhibition and fast network oscillations" *Nature Communications*, 6:6254, DOI: 10.1038 **(2015)**

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.