SIGMA-ALDRICH®
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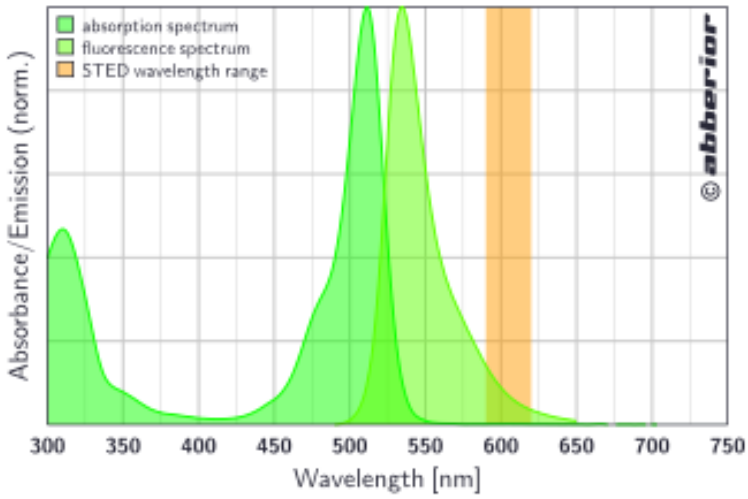
Product Information

52269 Anti-Mouse IgG-Abberior® STAR 512 antibody produced in goat



Key Features

- Superior photostability
- Ideal for STED and well suited for confocal microscopy
- High water solubility

Description

Abberior STAR 512 is a high-performance fluorescent dye which can be conveniently excited with an argon ion laser at 488 nm or 514 nm. For STED, a depletion wavelength around 600 nm is recommended. The dye can serve as a substitute for dyes such as Alexa Fluor® 514 or ATTO® 514.

Abberior STAR 512 is highly photostable and bright. It dissolves well in water or aqueous buffers which eliminates unspecific binding and decreases undesired background fluorescence

Chemical Data : Abberior® STAR 512

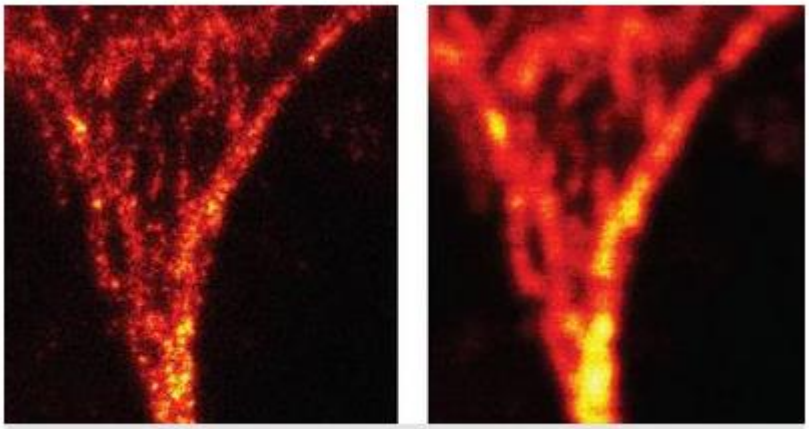
Solubility:	water, acetonitrile, methanol, DMSO, DMF
Polarity:	hydrophilic
Charge:	0 (when conjugated)
Purity:	> 90 %

Photophysical Data : Abberior® STAR 512

Absorption Maximum, λ_{max}, nm:	511 (PBS, pH 7.4) 512 (water) 517 (MeOH)
Fluorescence Maximum, λ_{fl}, nm:	530 (PBS, pH 7.4) 533 (MeOH)
Extinction Coefficient, ε, $M^{-1}cm^{-1}$:	84 000 (PBS, pH 7.4) 92 000 (water) 94 500 (MeOH)
Correction Factor, $CF_{260} = \varepsilon_{260}/\varepsilon_{max}$:	0.24 (PBS, pH 7.4, water) 0.32 (MeOH)
Correction Factor, $CF_{280} = \varepsilon_{280}/\varepsilon_{max}$:	0.07 (PBS, pH 7.4, water) 0.08 (MeOH)
Recommended STED Wavelength, λ_{STED}, nm:	590 – 620
Fluorescence Quantum Yield, η:	0.82 (PBS, pH 7.4)
Fluorescence Lifetime, τ:	4.1 ns (PBS, pH 7.4)

Applications

The spectroscopic properties and some application fields of Abberior STAR 512 have been reported for **STED** imaging and **FCS** experiments. Furthermore, Abberior STAR 512 serves well as a "donor" in a "donor − acceptor" dye pair used in **FRET** experiments.



Comparison of a STED (left) and the corresponding confocal (right) microscopy image obtained with an Abberior STAR 512 labelling.

Literature

1. G. Y. Mitronova et al. "New Fluorinated Rhodamines for Optical Microscopy and Nanoscopy" *Chem. Eur. J.*, 16, 4477-4488 **(2010)**
2. Leica SR GSD 3D Supported dyes
3. L. Westin et al. "Nanoscopic spine localization of Norbin, an mGluR5 accessory protein" *BMC Neuroscience*, 15, 45 **(2014)**

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.