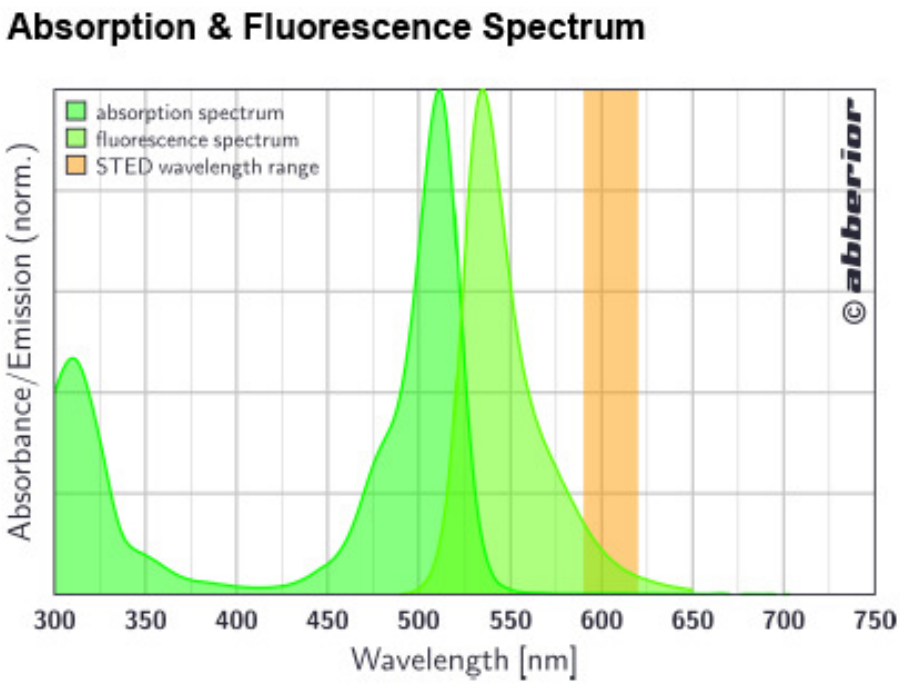
38922 Abberior® STAR 512, NHS ester



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.

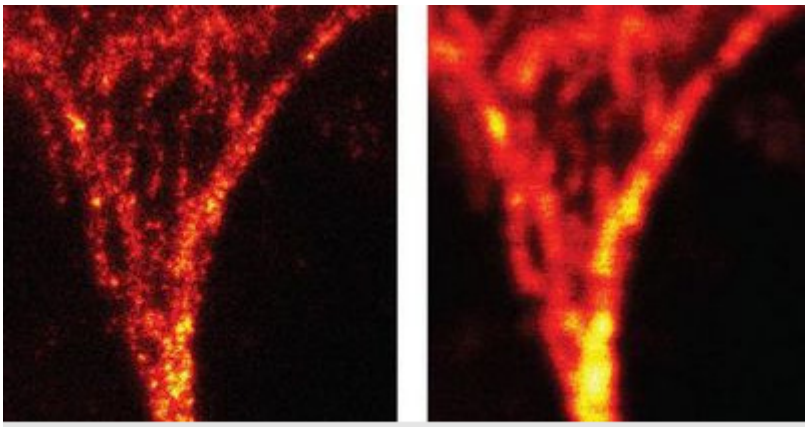
Chemical Data : Abberior® STAR 512

Chemical Structure:	on request
Molecular Formula:	$C_{32}H_{26}F_6N_4O_{12}S_2$
Molecular Weight:	836.7 g/mol
Exact Mass:	836.09 Da
Solubility:	PBS, pH 7.4; water; DMF; DMSO; aq. acetonitrile; MeOH
Polarity:	polar (anionic)
Net Charge (at PH 7.4):	-1
Content:	> 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, $M^{-1}cm^{-1}$:	85 000 (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



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

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

Literature

1. G. Y. Mitronova et.al. "New Fluorinated Rhodamines for Optical Microscopy and Nanoscopy", *Chem. Eur. J.* **16**, 4477–4488 (2010).
2. S. M. Polyakova et.al. "New GM1 Ganglioside Derivatives for Selective Single and Double Labelling of the Natural Glycosphingolipid Skeleton", *Eur. J. Org. Chem.* **2009**, 5162 (2009).

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.