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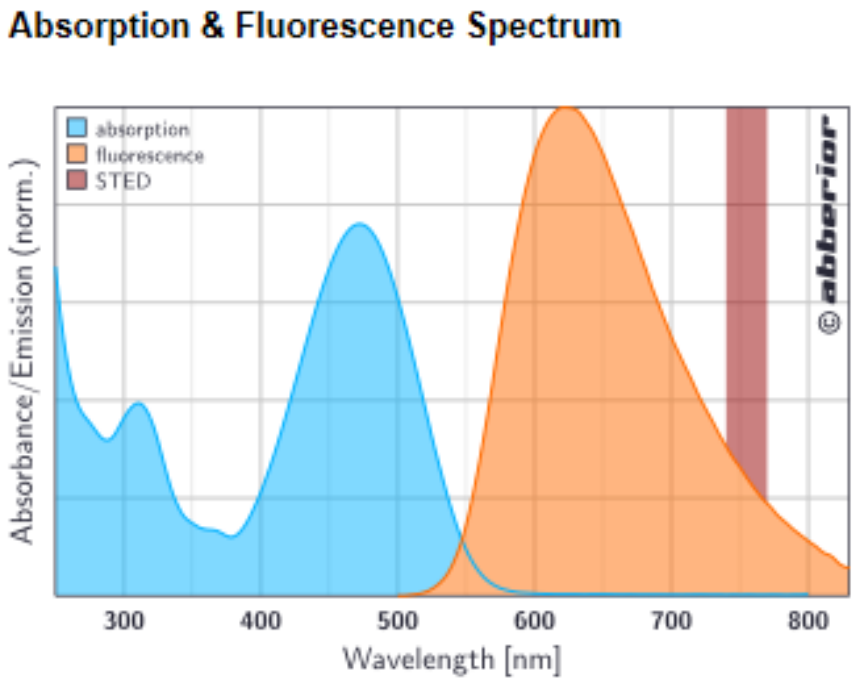
Product Information

94716 Abberior® STAR 470SXP, NHS ester



Key Features

- Ideal depletion behaviour in STED microscopy ~750 nm
- 2-color labeling partner with STAR 635P for 2-color STED microscopy
- Tested in the Leica TSC 2-color STED (Ti:Sa) system

Description

STAR470SXP is a new member of an entirely new class of dyes introduced exclusively by Abberior – **first commercially available phosphorylated fluorescent dye**. They turn out to be **extremely suitable for STED applications**. STAR470SXP is the latest development of long-Stokes-shift dyes for STED microscopy. The dye can be excited from 450 to 480nm.

Abberior STAR470SXP can substitute dyes like Chromeo®494.

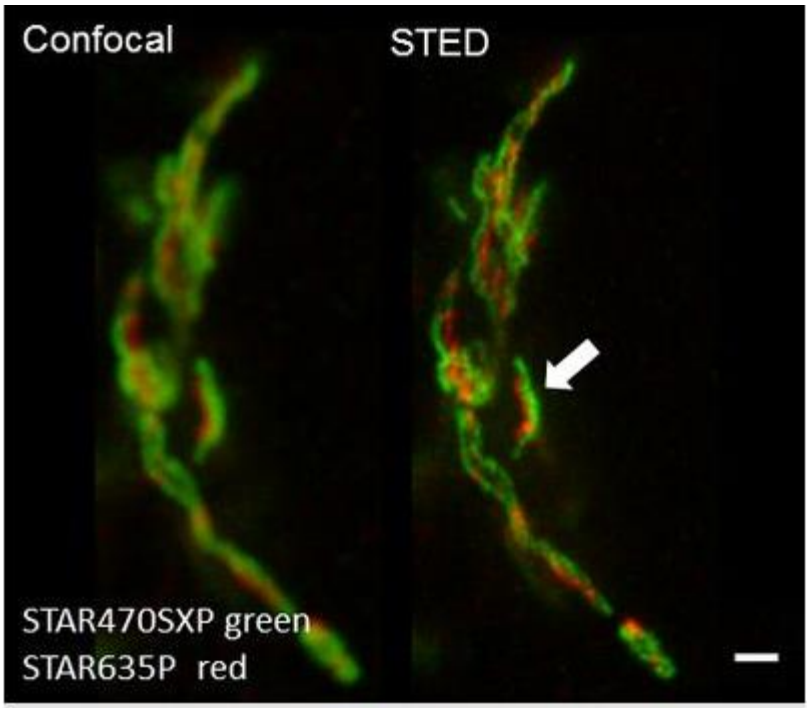
Chemical Data : Abberior® Star 470SXP

Chemical Structure:	on request
Molecular Formula:	$C_{31}H_{29}F_3N_3O_{10}P$
Molecular Weight:	691.5 g/mol
Exact Mass:	691.15 Da
Solubility:	PBS, pH 7.4; DMF; DMSO; aq. acetonitrile; MeOH
Polarity:	polar (anionic)
Net Charge (at PH 7.4):	-2
Content:	> 90 %

Photophysical Data : Abberior® Star 470SXP

Absorption Maximum, λ_{max}, nm:	467 (PBS, pH 7.4) 468 (water) 472 (MeOH)
Fluorescence Maximum, λ_{fl}, nm:	598 (PBS, pH 7.4; water) 597 (aq. acetonitrile) 587 (MeOH)
Extinction Coefficient, ε, $M^{-1}cm^{-1}$:	25 000 (PBS, pH 7.4) 21 500 (water) 22 500 (aq. acetonitrile) 23 500 (MeOH)
Correction Factor, $CF_{260} = \varepsilon_{260}/\varepsilon_{max}$:	0.55 (PBS, pH 7.4, water) 0.46 (aq. acetonitrile; MeOH)
Correction Factor, $CF_{280} = \varepsilon_{280}/\varepsilon_{max}$:	0.39 (PBS, pH 7.4, water) 0.37 (aq. acetonitrile; MeOH)
Recommended STED Wavelength, λ_{STED}, nm:	740 – 770
Fluorescence Quantum Yield, η:	0.12 (PBS, pH 7.4)
Fluorescence Lifetime, τ:	0.8 ns (PBS, pH 7.4)

Applications



Two-color STED imaging of the Golgi apparatus using the Leica TCS STED microscope. HeLa cells were fixed and treated with anti -p230 , labeled with Abberior STAR635P, and anti-Gpp130, labaled with Abberior STAR440SXP, to stain the the trans- and cis- sides of the Golgi respectively. Scale bars 1 µm. Image courtesy Francesca Bottanelli, Rothman Laboratory, Yale university, New Haven, USA.

Abberior STAR 470SXP is particularly designed and tested for 2-color STED microscopy in combination with our **STAR635P** using a single STED wavelength. **The dye is our recommendation for usage in the Leica TCS STED (Ti:Sa) 2-color system**. For more information see our **2-color dye package** section.

Literature

1. C.A. Wurm et al. "Novel red fluorophores with superior performance in STED microscopy", *Optical Nanoscopy* (2012) **1**:7

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.