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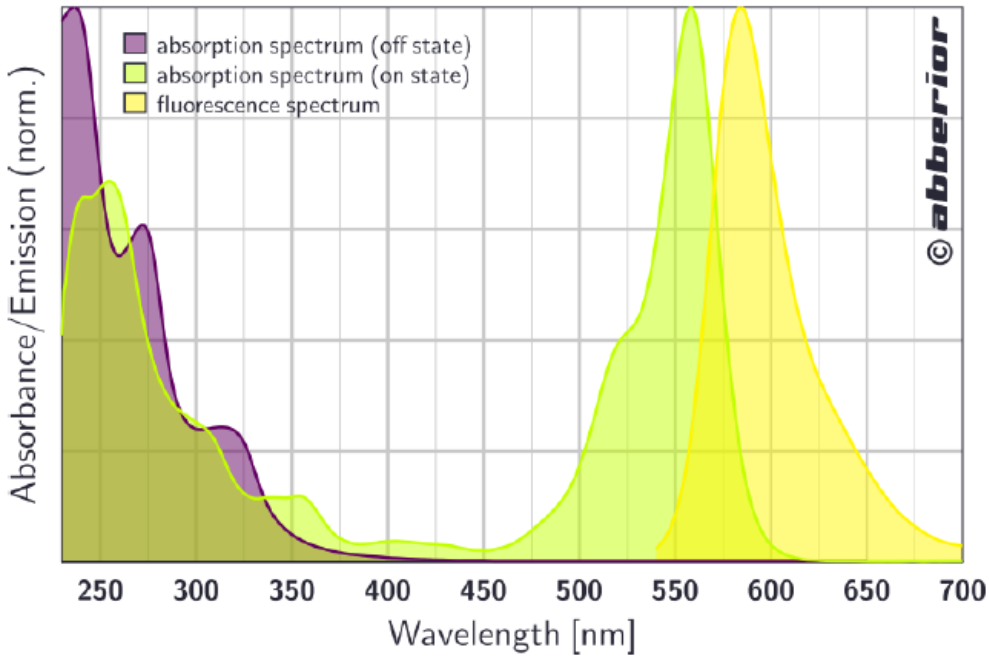
Product Information

79189 Abberior® FLIP 565 NHS ester

Absorption & Fluorescence Spectrum



Key Features

- Ideal for PALM, STORM, GSDIM microscopy
- Compatible with 2-photon excitation (for optical sectioning)
- Multiple switching cycles

Description

This **photoswitchable marker** belongs to the photosensitive spiroamide compounds which, upon photoswitching with UV light at 360−375 nm, form transiently fluorescent species. In the dark, the colored and fluorescent form of Abberior FLIP 565 returns to the nonfluorescent state via thermal relaxation.

The compound is performing very well in PALM, STORM and GSDIM microscopy. Below is shown an image taken with Abberior FLIP 565 with a **Nikon N-STORM** microscope at the Nikon Imaging Application Center in Hamburg. Due to the very short lifetime of the emitting form the compound is less suited for conventional fluorescence microscopy.

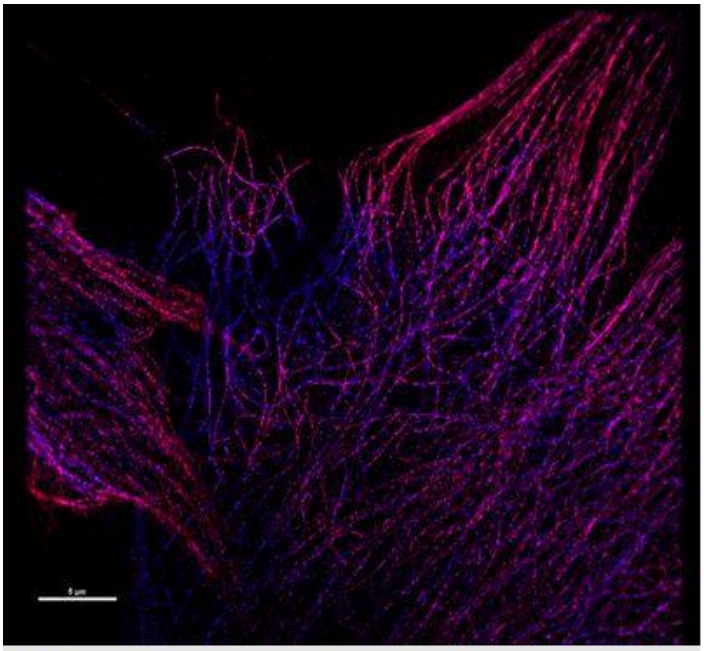
Chemical Data : Abberior® FLIP 565

Structure:	on request
Formula:	on request
Molecular weight:	907.9 g/mol (NHS ester), 932.9 (maleimide)
Solubility:	water, acetonitrile, methanol, DMSO, DMF
Polarity:	moderately hydrophilic
Charge:	−1 (when caged or conjugated)
Purity:	> 90 %

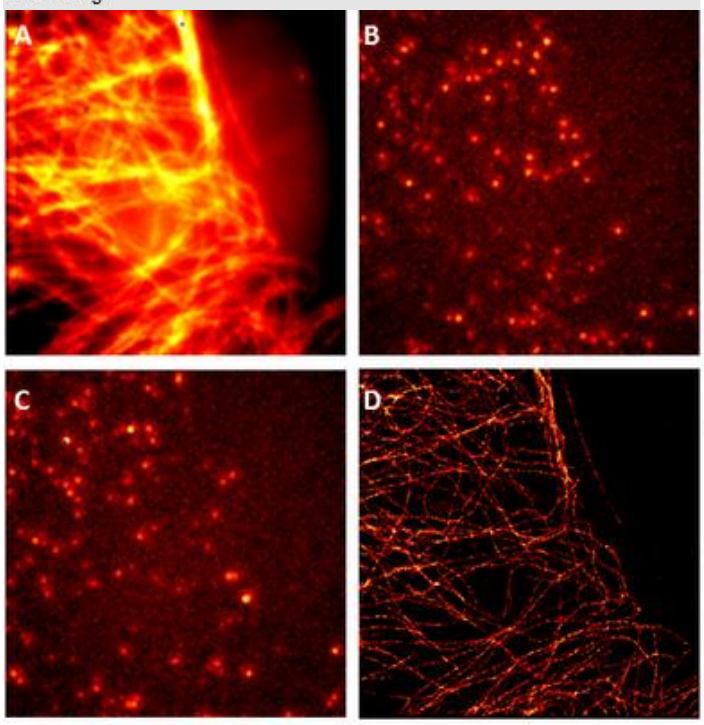
Photophysical Data : Abberior® FLIP 565

Absorption Maximum (off-state), λ_{max}:	314 nm (PBS, pH 7.4),
Extinction Coefficient, $\varepsilon(\lambda_{max})$:	47,000 $M^{-1}cm^{-1}$ (PBS, pH 7.4)
Correction Factor, $CF_{260} = \varepsilon_{260}/\varepsilon_{max}$:	tbd
Correction Factor, $CF_{280} = \varepsilon_{280}/\varepsilon_{max}$:	tbd
Fluorescence Maximum, λ_{fl}:	580 nm (PBS, pH 7.4)
Photoactication Wavelength:	310-380 (one-photon activation) 650-800 (two-photon activation)
Fluorescence Quantum Yield, η:	0.38 (PBS, pH 7.4),
Fluorescence Lifetime, τ:	tbd

Applications



Alpha tubulin (in human foreskin fibroblasts) visualized with Abberior Flip 565 on a Nikon N-STORM microscope. The z positions are colour coded. Courtesy of Dennis Eggert, Nikon Applikationszentrum Norddeutschland, Heinrich-Pette-Institut, Hamburg



Comparison of widefield (A) and PALM image (D) with a FLIP 565 labeling. (B) and (C) are typical single widefield images of individual FLIP 565 molecule fluorescence.

Abberior FLIP 565 can also undergo two-photon photoactivation with intense IR light (~ 760 nm). Consequently, this label is dedicated for the recording images with optical sectioning, i.e. activating a thin layer of ~ 500 nm.

Literature

1. V. N. Belov *et al.*, "Rhodamine Spiroamides for Multicolor Single-Molecule Switching Fluorescent Nanoscopy", *Chem. Eur. J.* **15**, 10762−10776 (2009).

2. J. Fölling *et al.*, "Fluorescence Nanoscopy with Optical Sectioning by Two-Photon Induced Molecular Switching using Continuous-Wave Lasers", *ChemPhysChem* **9**, 321−326 (2008).

3. M. Bossi *et al.*, "Multicolor Far-Field Fluorescence Nanoscopy through Isolated Detection of Distinct Molecular Species", *Nano Lett.* **8**(8), 2463−2468 (2008).

4. J. Fölling *et al.*, "Photochromic Rhodamines Provide Nanoscopy with Optical Sectioning"", *Angew. Chem. Int. Ed.* **46**, 6266-6270 (2007).

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.