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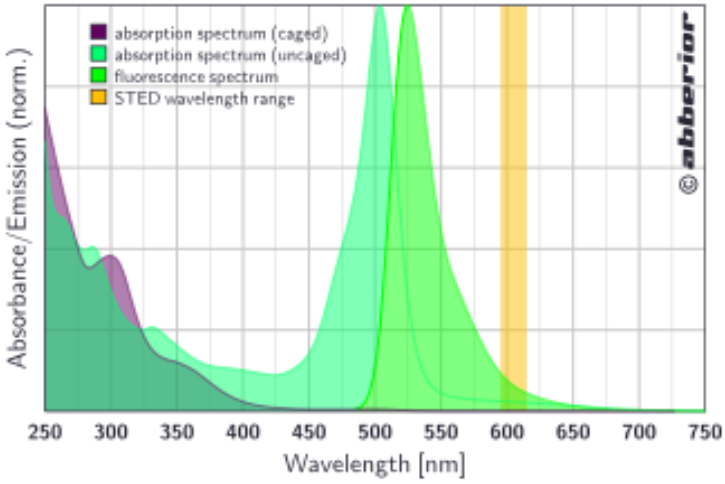
Product Information

41155 Anti-Rabbit IgG-Abberior® CAGE 500 antibody produced in goat

Description

Abberior CAGE 500 is a masked dye which is initially colorless and nonfluorescent. When illuminated with UV light it undergoes a rapid uncaging reaction and releases a highly fluorescent dye with spectral properties essentially identical to Abberior STAR 512. The dye performs e.g. very well in the Nikon N-Storm, particularly as a **2-color partner** with CAGE552 or FLIP565.



Key Features

- High brightness and photostability
- Ideal for PALM, STORM, GSDIM
- Well suited as 2nd PALM&STORM color

Chemical Data : Abberior® CAGE 500

Formula:	$C_{30}H_{19}F_6N_5O_6$ (NHS ester) $C_{32}H_{22}F_6N_6O_5$ (maleimide)

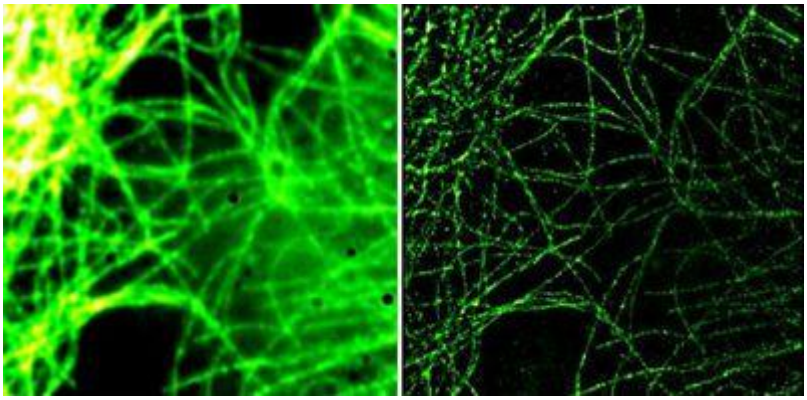
Molecular weight:	659.5 g/mol (NHS ester) 684.5 g/mol (maleimide)
Solubility:	acetonitrile, methanol, DMSO, DMF, THF
Polarity:	moderately hydrophobic
Charge:	0 (zwitterionic) when caged or conjugated
Purity:	> 90 %

Photophysical Data : Abberior® CAGE 500

Absorption Maximum, λ_{max},nm:	230, 299, 340 (non-activated, PBS, pH 7.4) 511 (photoactivated, PBS, pH 7.4)
Fluorescence Maximum, λ_{fl},nm:	525 (photoactivated, PBS, pH 7.4)
Extinction Coefficient, ε, $M^{-1}cm^{-1}$:	74.000 (non-photoactivated, λ=230 nm, PBS, pH 7.4) 17.000 (non-photoactivated, λ=299 nm, PBS, pH 7.4) 5.100 (non-photoactivated, λ=340 nm, PBS, pH 7.4) 50.000 (photoactivated, PBS, pH 7.4)
Photoactivation wavelength, λ_{fl}, nm:	360-440
Recommended STED Wavelength, λ_{STED}, nm:	595-615
Fluorescence Quantum Yield, η:	0.85 (after photoactivation, PBS, pH 7.4)
Fluorescence Lifetime, τ:	4.1 ns (PBS, pH 7.4)

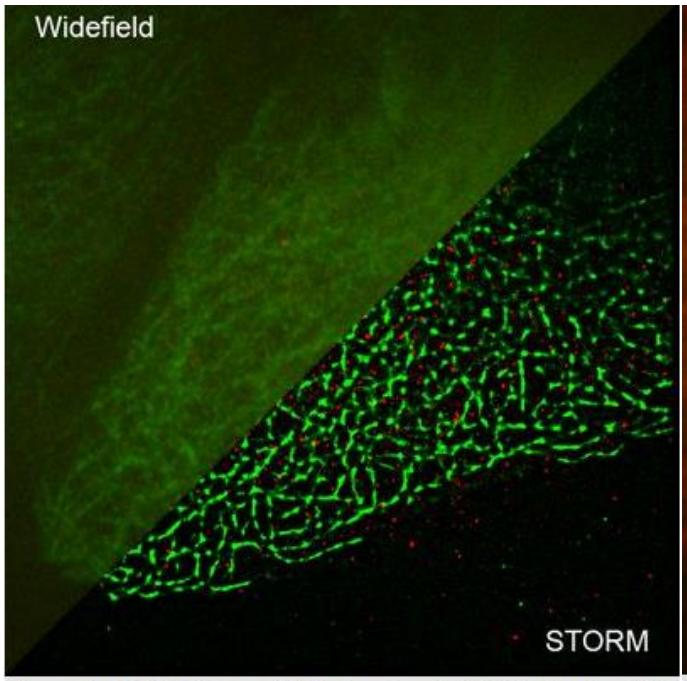
Applications

Abberior CAGE 500 is designed for single-molecule photoswitching microscopy modes such as **PALM, STORM** and **GSDIM** and, in its uncaged form, also performs well in STED microscopy. Further, after photoactivation, Abberior CAGE markers can be tracked to analyse molecular dynamics such as diffusion, flow directions and velocities. When released in close proximity to other (permanently fluorescent) dye molecules Abberior CAGE 500 can act as a **FRET** donor.

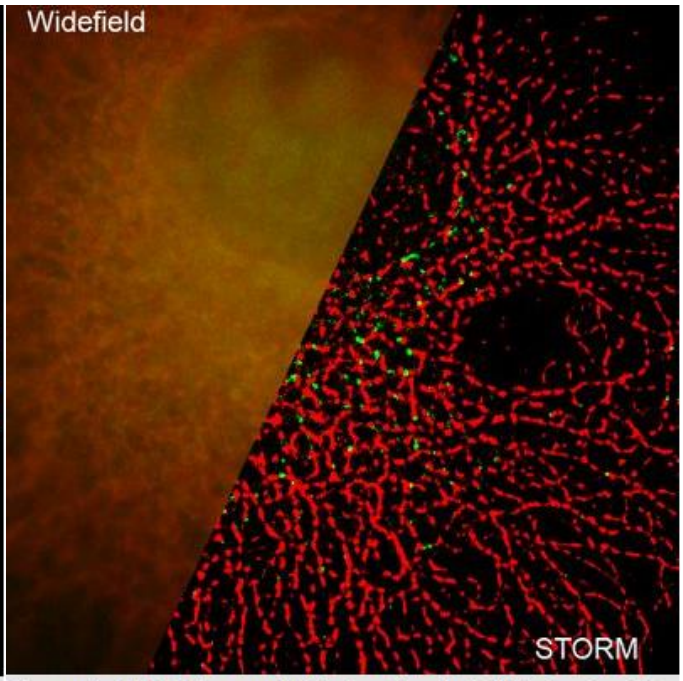


Comparison of a conventional (left) and the corresponding high-resolution microscopy image obtained with an Abberior CAGE 500 labeling.

Below images were acquired with a Nikon N-STORM microscope equipped with a quadband filter at the Nikon Imaging Application Center in Hamburg.



Two color STORM image of Tubulin stained with Abberior Cage500 (green) and GM130 stained with Abberior Flip565 (red) in PtK2 cells. Image courtesy of Dennis Eggert, HPI, Hamburg



Two color STORM image of Tubulin stained with Abberior Cage552 (red) and GM130 stained with Abberior Cage500 (green) in PtK2 cells. Image courtesy of Dennis Eggert, HPI, Hamburg.

Literature

V. N. Belov et.al. "Rhodamines NN: A Novel Class of Caged Fluorescent Dyes", *Angew. Chem. Int. Ed.* 49, 3520−3523 (2010)

G. Y. Mitronova et.al. "New Fluorinated Rhodamines for Optical Microscopy and Nanoscopy", *Chem. Eur. J.* **16**, 4477−4488 (2010)

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.

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