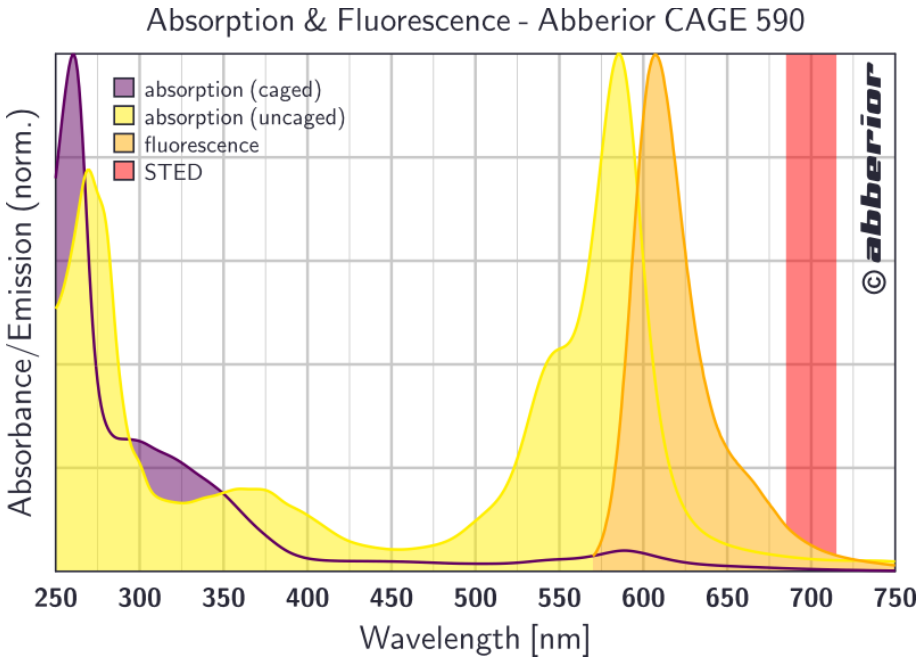
77958 Abberior® CAGE 590, NHS ester



Key Features

- First CAGE dye in the red fluorescent regime
- Ideal for PALM, STORM, GSDIM
- Well suited as 2nd STED color (after uncaging)

Description

Abberior CAGE 590 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. The dye opens up the red fluorescent regime for CAGE dyes. It can most effectively be excited from 560 to 600nm.

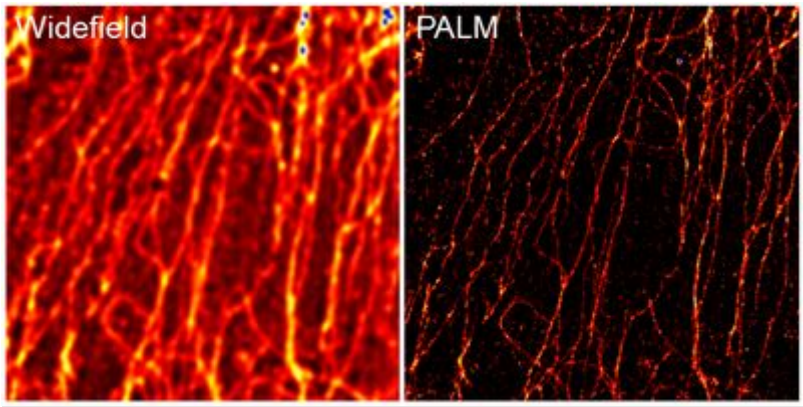
Chemical Data : Abberior® CAGE 590

Structure:	on request
Formula:	$C_{40}H_{37}N_5O_8$
Molecular weight:	715.8 g/mol
Exact Mass:	715.26 Da
Solubility:	DMF, DMSO, aq. acetonitrile, MeOH, THF
Polarity:	polar (anionic, non-photoactivated or photoactivated)
Net Charge (at pH 7.4):	0 (non-photoactivated or photoactivated)
Purity:	> 90 % *

Photophysical Data : Abberior® CAGE 590

Absorption Maximum, λ_{max}:	262 (non-photoactivated, PBS, pH 7.4) 325, 351 - shoulder (non-photoactivated, PBS, pH7.4) 595 (photoactivated, PBS, pH 7.4)
Fluorescence Maximum, λ_{fl}:	615 (photoactivated, PBS, pH 7.4)
Extinction Coefficient, ε, $M^{-1}cm^{-1}$:	75 000 (photoactivated, PBS, pH 7.4)
Photoactivation wavelength, λ_{fl}, nm:	360-440
Recommended STED Wavelength, λ_{STED}, nm:	685-715
Fluorescence Quantum Yield, η:	0.80 (after photoactivation, PBS, pH 7.4)
Fluorescence Lifetime, τ:	-

Applications



Comparison of a conventional (left) and the corresponding high-resolution (right) microscopy image obtained with an Abberior CAGE 590 label.
Abberior CAGE 590 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 in confocal and epifluorescence microscopy to analyse molecular dynamics such as diffusion, flow directions and velocities, e.g. are **tracking experiments** in which the fluorescence signal is observed over time after the initial release of the fluorophore.

Literature

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