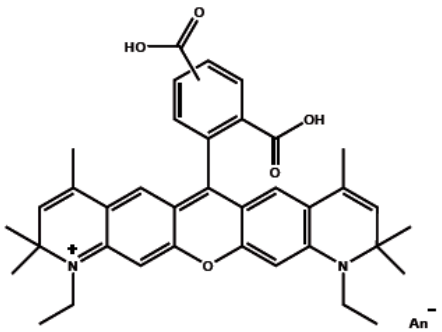
93042 Atto 590 phalloidin

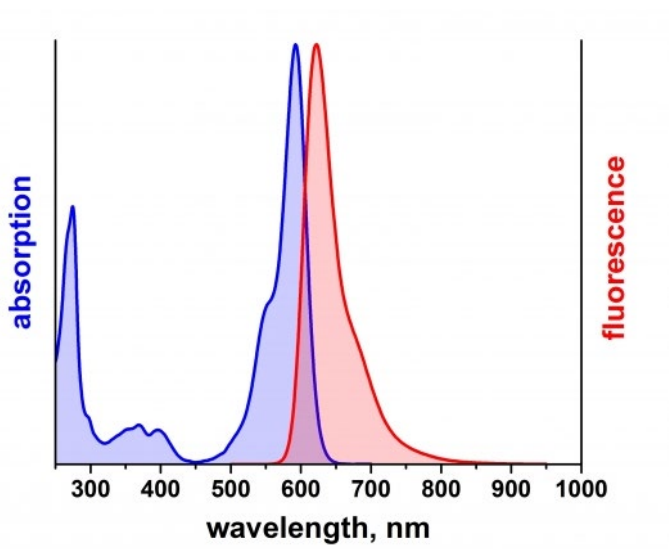
Atto 590 is a novel fluorescent label belonging to the class of Rhodamine dyes. The dye is designed for application in the area of life science, e.g. labeling of DNA, RNA or proteins. Characteristic features of the label are strong absorption, high fluorescence quantum yield, high thermal and photo-stability, and very little triplet formation. The dye is highly suitable for single-molecule detection applications and high-resolution microscopy. As supplied, Atto 590 consists of a mixture of two isomers with practically identical absorption and fluorescence.
Phalloidin is a fungal toxin isolated from the poisonous mushroom *Amanita phalloides.* Its toxicity is attributed to the ability to bind F actin in liver and muscle cells. As a result of binding phalloidin, actin filaments become strongly stabilized. Phalloidin has been found to bind only to polymeric and oligomeric forms of actin, and not to monomeric actin. The dissociation constant of the actin-phalloidin complex has been determined to be on the order of 3 x 10^{-8}. Phalloidin differs from amanitin in rapidity of action; at high dose levels, death of mice or rats occurs within 1 or 2 hours. Fluorescent conjugates of phalloidin are used to label actin filaments for histological applications. Some structural features of phalloidin are required for the binding to actin. However, the side chain of amino acid 7 (g-d-dihydroxyleucine) is accessible for chemical modifications without appreciable loss of affinity for actin.

Product Description

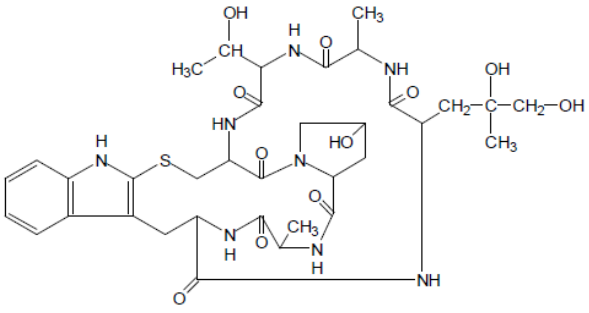
MW	1475 g/mol
λ_{abs}	593 nm
ε_{max}	1.2 x 10^5 M^{-1} cm^{-1}
λ_{fl}	622 nm
η_{fl}	80 %
τ_{fl}	3.7 ns
CF_{260}	0.39
CF_{280}	0.43



Optical data of Atto 590 (carboxy derivative (in water)



Properties of Phalloidin:
Molecular formula: $C_{35}H_{48}N_8O_{11}S$
Molecular weight: 788.9 (anhydrous)
Extinction Coefficient: $E^{1\%}$ = 0.597 (295 nm in water)



Staining procedure:

We recommend solving the lyophilisate (10 nmol) in 500 µl methanol as a stock solution.
Store the stock solution at -20 C.
For F-actin staining add 20 - 30 µl of the stock solution to 1 ml of the labeling buffer (PBS buffer).

Storage of Atto 590 phalloidin: protected from light at -20°C

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.