07373 Phalloidin-Atto 740

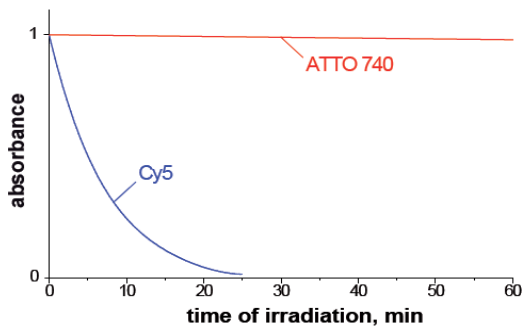
Application

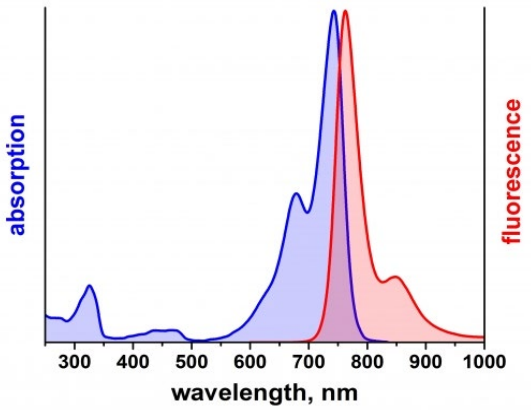
Atto 740 belongs to a new generation of fluorescent labels for the near infrared spectral region. The dye is designed for application in the area of life science, e.g. labeling of DNA, RNA or proteins. Characteristic features of the dye are strong absorption and good fluorescence as well as excellent thermal and photo-stability. Atto 740 is a cationic dye. After coupling to a substrate the dye carries a net electrical charge of $^{+1}$.
Atto 740 is a pH sensitive product. While practically stable up to pH 7.4 (PBS-buffer), it slowly degrades at higher pH. If exposed to higher pH for coupling purposes, we recommend reducing the pH immediately after completion of the reaction.
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	1352 g/mol
λ_{abs}	743 nm
ε_{max}	1.2 x 10^5 M^{-1} cm^{-1}
λ_{fl}	763 nm
η_{fl}	10 %
τ_{fl}	0.6 ns
CF_{260}	0.07
CF_{280}	0.07

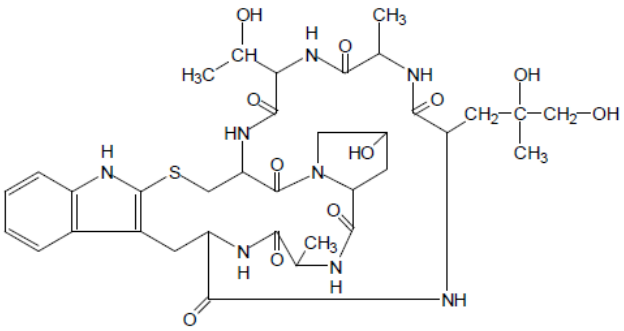
Optical data of the carboxy derivative (in aqueous solution)





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 Phalloidin-Atto 740: 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.