

Product Data Sheet

Product Name: Dansylcadaverine (Monodansyl cadaverine)

Cat. No.: GC30072

Chemical Properties

Cas. No. 10121-91-2

SMILES NCCCCCNS(=O)(=O)c1ccc2ccccc2c1N(C)C

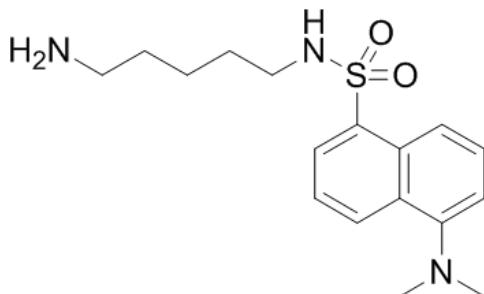
Formula $C_{17}H_{25}N_3O_2S$ M.Wt 335.46

Solubility DMSO : 62.5 mg/mL (186.31 mM) Storage Store at -20°C, protect from light, stored under nitrogen

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

Caution: Product has not been fully validated for medical applications. For research use only.

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Kinase experiment: To determine the time course of transglutamination, thymosin $\beta 4$ (120 μM) is incubated with Dansylcadaverine (5 mM) in 70 μL buffer consisting of 10 mM Tris-HCl, pH 7.4, 15 mM CaCl_2 , 3 mM DTT. The reaction is started by addition of 0.1 U transglutaminase. Immediately after addition of the enzyme ($t=0$) and at indicated times, 10 μL are taken from the mixture, diluted in 490 μL 0.1% TFA to stop the reaction and analyzed by HPLC[1].

Cell experiment: MCF7 cells (2.4×10^4) are seeded into 35 mm plates. After 24 h incubation, CuO NPs are added with an increasing concentration in the presence or absence of 3-Methyladenine (3-MA) for different time periods. The cells are then incubated with 50 mM Dansylcadaverine (MDC) at 37°C for 15 min and washed with 1 $\times$ PBS three times with 5 min interval. Finally, the cells are observed under a fluorescence microscope[2].

References:

- [1]. Huff T, et al. Thymosin beta(4) serves as a glutaminyl substrate of transglutaminase. Labeling with fluorescent dansylcadaverine does not abolish interaction with G-actin. FEBS Lett. 1999 Dec 24;464(1-2):14-20.
- [2]. Laha D, et al. Interplay between autophagy and apoptosis mediated by copper oxide nanoparticles in human breast cancer cells MCF7. Biochim Biophys Acta. 2014 Jan;1840(1):1-9.

Background

Dansylcadaverine is a fluorescent probe.

Detection of Dansylcadaverine fluorescence after SDS-PAGE shows that the amount of actin-thymosin $\beta 4$ crosslink is very low in the presence of Dansylcadaverine and transglutaminase, while there are large amounts of Dansylcadaverine-labeled thymosin $\beta 4$ and actin. The amount of cross-link further decreases in the presence of Dansylcadaverine competing for Lys residues of either G-actin or thymosin $\beta 4$ (100 μM). In the absence of thymosin $\beta 4$, Dansylcadaverine-labeled actin polymerized to F-actin as revealed by fluorescence detection after native PAGE[1].

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