

Laurdan

Chemical Properties

CAS No. :	74515-25-6
Formula:	C ₂₄ H ₃₅ NO
Molecular Weight:	353.541
Storage:	Keep away from direct sunlight,Store at low temperature Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

Biological Description

Description	Laurdan (6-Dodecanoyl-2-dimethylaminonaphthalene) is a fluorescent membrane probe that is spectrally sensitive to the phospholipid phase of the cell membrane to which it binds.
Targets(IC50)	Others
Cell Research	<p>Laurdan as a biosensor to monitor changes in membrane water content during NIH3T3 cell migration</p> <p>I. Solution preparation</p> <ol style="list-style-type: none">1. Preparation of storage solution: Dissolve Laurdan in dimethyl sulfoxide (DMSO) to prepare a 1.8 mM stock solution.2. Preparation of working solution: Dilute the Laurdan stock solution at a dilution of 1: 1000. <p>II. Operation steps</p> <ol style="list-style-type: none">1. Culture NIH3T3 cells in Dulbecco's modified Eagle medium supplemented with 10% fetal bovine serum, 5 mL Pen-Strep, and 2.5 mL 1 M HEPES.2. Seed freshly isolated NIH3T3 cells into 35 mm Mattek glass-bottom culture dishes coated with fibronectin.3. Incubate the cells with Laurdan at 37°C for 40 min.4. Observe using an LSM710 META laser scanning microscope.5. Calibration of the system and phasor plot of FLIM data by measuring fluorescein (pH 11). <p>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.</p>

Solubility Information

Solubility	DMSO: 10.00 mg/mL (28.29 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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A DRUG SCREENING EXPERT

In vivo Formulation	10% DMSO+90% Corn Oil: 1.00 mg/mL (2.83 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8285 mL	14.1427 mL	28.2853 mL
5 mM	0.5657 mL	2.8285 mL	5.6571 mL
10 mM	0.2829 mL	1.4143 mL	2.8285 mL
50 mM	0.0566 mL	0.2829 mL	0.5657 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

- Golfetto O, et al. Laurdan fluorescence lifetime discriminates cholesterol content from changes in fluidity in living cell membranes. *Biophys J.* 2013 Mar 19;104(6):1238-47.
- Sha F, Yang P, Wang H, et al. 10-Hydroxydec-2-enoic acid enhances the erythrocyte membrane fluidity via interacting with phosphatidylcholine and phosphatidylethanolamine. *Italian Journal of Food Science.* 2023, 35(4).
- Vequi-Suplicy CC, Coutinho K, Lamy MT. New insights on the fluorescent emission spectra of Prodan and Laurdan. *J Fluoresc.* 2015 May;25(3):621-9.
- Titova TY, Artyukhov VY, Zharkova OM, Morozova JP. Spectral-luminescent properties of laurdan molecule. *Spectrochim Acta A Mol Biomol Spectrosc.* 2014 Apr 24;124:64-9. doi: 10.1016/j.saa.2013.12.097. Epub 2014 Jan 7. PubMed PMID: 24463241.
- Osella S, Murugan NA, Jena NK, Knippenberg S. Investigation into Biological Environments through (Non)linear Optics: A Multiscale Study of Laurdan Derivatives. *J Chem Theory Comput.* 2016 Dec 13;12(12):6169-6181. Epub 2016 Nov 15.

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