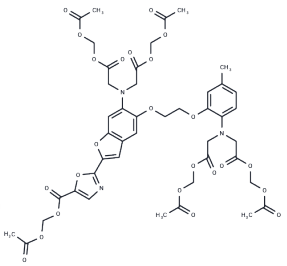
Data Sheet (Cat.No.T18995)

TargetMol

Fura-2 AM

Chemical Properties



CAS No. : 108964-32-5

Formula: C44H47N3O24

Molecular Weight: 1001.85

Storage: Keep away from direct sunlight,The compound is unstable in solution. Please use soon
Powder: -20°C for 3 years
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Fura-2 AM is a membrane-permeable Ca^{2+} (calcium ion) indicator that is converted to Fura-2 by esterase within cells. Its fluorescence emission wavelength is around 510 nm, with excitation maxima at 340 nm under high calcium concentrations and 380 nm under low calcium concentrations. Calcium ion concentrations can be calculated using the fluorescence intensity ratio.
Targets(IC50)	Others
In vitro	A simplified protocol for staining cortical neurons with the calcium dye fura-2 is as follows: Cells are loaded with the acetoxymethyl ester of fura-2 (fura-2 AM), which diffuses across the cell membrane and is deesterified by cellular esterases to produce the free acid fura-2. The exact parameters for fura-2 loading vary depending on the cell type. It is recommended to test various conditions by preparing several loading solutions containing various concentrations of fura-2, ranging from 1–4 μM. Cells are incubated in the loading solutions for varying times, ranging from 15 minutes to 2 hours, and the loading volume is tested at both room temperature and 37°C. 1. First, prepare a 1 mM stock solution of fura-2 AM by adding 50 μl of DMSO to a 50 μg vial provided by Invitrogen. It is important to use dry DMSO packaged under nitrogen, and it is necessary to remove the DMSO with a needle by piercing the septum to prevent hydration of the DMSO. After preparing the fura-2 AM solution, store it in a dark, dry place. Fura-2 AM in DMSO is stable for 24 hours at room temperature and for several months at -20°C in a dry container. 2. Aliquot 2 ml of culture medium into 15 ml conical tubes, warm to 37°C, and then add 2 μl of Fura-2 AM stock solution to create a 1 μM Fura-2 AM solution. Vortex the solution vigorously for 1 minute. 3. Transfer the loading solution to a 35 mm tissue culture dish and transfer the coverslip with cells to the dish. 4. Incubate the neurons at 37°C in a dark incubator for 30 minutes. Time the incubation period precisely. 5. Prepare a 35 mm dish containing 2 ml of tissue culture medium without Fura-2 AM. Remove the coverslip from the loading solution and place it in a new dish. 6. Mount the coverslip on the imaging chamber. Remove the coverslip from the 35 mm

In vitro	dish and quickly mount it on the chamber, making sure to prevent the cells from drying out. We used an imaging chamber manufactured by Warner Instruments that allows a 10 mm coverslip containing the cells to be mounted on the bottom and a second coverslip to be mounted on the top, forming a sandwich. The two coverslips are secured to the chamber with vacuum grease, and two tubes at either end of the chamber allow solutions to be perfused through the chamber. The input line is connected to a syringe, and the output line is connected to a well, which is evacuated by a suction tube connected to a vacuum trap. [3] The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 8 mg/mL (7.99 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.9982 mL	4.9908 mL	9.9815 mL
5 mM	0.1996 mL	0.9982 mL	1.9963 mL
10 mM	0.0998 mL	0.4991 mL	0.9982 mL
50 mM	0.020 mL	0.0998 mL	0.1996 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

Tinning PW, et al. A 340/380 nm light-emitting diode illuminator for Fura-2 AM ratiometric Ca2+ imaging of live cells with better than 5 nM precision. J Microsc. 2017 Aug 24.
Odmara L Barreto-Chang, et al. Calcium Imaging of Cortical Neurons using Fura-2 AM. J Vis Exp. 2009 Jan 19;(23). pii: 1067.
Barreto-Chang OL, Dolmetsch RE. Calcium imaging of cortical neurons using Fura-2 AM. J Vis Exp. 2009 Jan 19;(23): 1067.

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