Fluo-8 AM, green fluorescent calcium binding dye

Product name: Fluo-8 AM, green fluorescent calcium binding dye
Description: Medium affinity green fluorescent calcium binding dye. Cell-permeable.

Biological description: Medium affinity green fluorescent calcium binding dye. Binds to intracellular calcium ($K_d = 390$ nM). Fluorescence intensity increases upon Ca$^{2+}$ binding. Cell-permeable.

Fluo-8 (or Fluo-2 Medium Affinity) has been found to be brighter (1.5x) than Fluo-4 in cellular experiments. It offers improved cell loading and Ca$^{2+}$ response while maintaining the convenient Fluo-3 and Fluo-4 spectral wavelength of maximum excitation at 490 nm and maximum emission at 520 nm. Fluo-8 loading can be performed at room temperature.

CAS Number: 1345980-40-6

Chemical structure:

Properties:
Excitation: 490nm
Emission: 520nm
Chemical name: Bis(acetoxymethyl) 2,2'-(4-(6-(acetoxymethoxy)-3-oxo-3H-xanthen-9-yl)-2-(2-(bis(2-acetoxymethoxy)-2-oxoethyl)amino)phenoxy)ethoxy)phenylazanediyl)diacetate
Molecular weight: 1046.94
Molecular formula: C$_{50}$H$_{50}$N$_2$O$_{23}$
Storage instructions

Store at -20°C. Store under desiccating conditions. The product can be stored for up to 12 months.

Solubility overview

Soluble in DMSO

Handling

Wherever possible, you should prepare and use solutions on the same day. However, if you need to make up stock solutions in advance, we recommend that you store the solution as aliquots in tightly sealed vials at -20°C. Generally, these will be useable for up to one month. Before use, and prior to opening the vial we recommend that you allow your product to equilibrate to room temperature for at least 1 hour.

For more information on AM esters please visit our AM esters FAQ page.

Need more advice on solubility, usage and handling? Please visit our frequently asked questions (FAQ) page for more details.

SMILES

CC(=O)OCOC(=O)CN(CC(=O)OCOC(C)=O)c5ccccc5OCCOc1cc(cc1N(CC(=O)OCOC(C)=O)CC(=O)OCOC(C)=O)c=2c4ccc(cc4OC3=CC(=O)C=CC=23)OCOC(C)=O

Source

Synthetic

Images

FFA treatments increase Ca^{2+} influx to induce ERS in β-TC3 cells.

β-TC3 cells were incubated with FFA or BSA for 16 h, and then stimulated with 4 µM thapsigargin for 20 min to activate store-operated Ca^{2+} entry. Fluorescence densities of Ca^{2+} change were monitored in Fluo-8/AM-loaded β-TC3 cells after FFA or BSA treatments.

(From Figure 2B of Cui et al)

U2OS cells were seeded overnight at 40,000 cells per 100 µL per well in a 96-well black wall/clear bottom costar plate. The growth medium was removed, and the cells were incubated with 100 µl of 4 µM Fluo-4 AM or Fluo-8® AM in HHBS at 37 °C, 5% CO₂ incubator for 1 hour. The cells were washed twice with 200 µl HHBS, then imaged with a fluorescence microscope using FITC channel.
Fluo-8 vs Fluo-4 sensitivity to calcium release in HEK-293 cells induced by Carbachol.

Functional Studies - Fluo-8 AM, green fluorescent calcium binding dye (ab142773)

Please note: All products are “FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES, NOT FOR USE IN HUMANS”

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors
- Abcam biochemicals are novel compounds and we have not tested their biological activity in house. Please use the literature to identify how to use these products effectively. If you require further assistance please contact the scientific support team