

Product Information Sheet

Order: # MFP-C099

Calcein AM (1 mM solution in anhydrous DMSO)

SUMMARY

shipped at RT; store at -20 °C

CAS Number: 148504-34-1

$C_{46}H_{46}N_2O_{23} = 994.86$

Unit: 1 ml 1 mM Calcein-AM in DMSO

Chemical Name

3',6'-Di(O-acetyl)-2',7'-bis[N,N bis(carboxymethyl)aminomethyl] fluoresceintetraacetoxymethyl ester, DMSO solution

Appearance

colorless solution

Purity

> 90.0% (HPLC)

Absorbance (100 µl/10 ml 1 M NaOH)

> 0.77 (500 nm)

Absorbance (100 µl/10 ml DMSO)

< 0.010 (500 nm)

Introduction

Calcein-AM readily passes through the cell membrane of viable cells because of its enhanced hydrophobicity as compared to Calcein. After Calcein-AM permeates into the cytoplasm, it is hydrolyzed by esterases to Calcein, which remains inside the cell. Among other reagents, including BCECF-AM and Carboxy-fluorescein diacetate, Calcein-AM is the most suitable fluorescent probe for staining viable cells because of its low cytotoxicity. Calcein does not inhibit any cellular functions such as proliferation or chemotaxis of lymphocytes. In addition, viability assays using Calcein are reliable and correlate well with the standard ^{51}Cr -release assay. The excitation and emission wavelengths of Calcein are 490 nm and 515 nm, respectively.

Protocol

1. Prior to the experiment, dilute 1 mM Calcein-AM solution with PBS to prepare a 1 - 50 µM Calcein-AM solution.^{a)} **Note:** This working solution is not storable!
2. Add Calcein-AM solution with 1/10 of the volume of Phenol Red-free cell culture medium to the cell culture.^{b)}
3. Incubate the cells at 37 °C for 15 - 30 minutes.
4. Wash cells twice with PBS or an appropriate buffer.
5. Observe the cells using a fluorescence microscope with 490 nm excitation and 515 nm emission filters.

a) If the Calcein-AM loading into cells is difficult, use a detergent such as Pluronic F127.

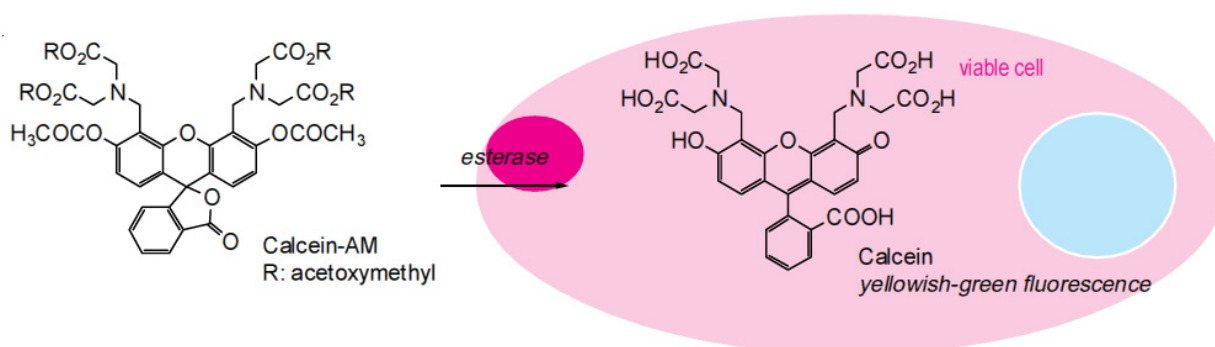
b) Or you may replace the culture medium with 1/10 concentration of Calcein-AM buffer solution.

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Mechanism of Viable Cell Staining



References

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Order Information, Shipping and Storage

Order#	Product	Quantity
MFP-C099	Calcein AM (1 mM solution in anhydrous DMSO)	1 ml
shipped at RT; store at -20 °C		

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