FT-95397A

Advion Interchim scientific

CALCEIN Calceins analogs: Violet, Blue, Red, Orange

Analogs of the popular Calcein FP-466251 green dye, a great probe for cell viability and cell adhesion due to its greater retention in cell, available with different colors!

Products Information

Product name cat.number	MW (g·mol^{-1})	λ_{exc}\\λ_{em} (nm)	mol. abs. ($M^{-1}cm^{-1}$)	Solubility	Comments
Calcein Violet405 FP-JQ8150 , 1 mg	~600	405 / 500		**DMSO**	Violet
Calcein Violet500 FP-FJ8600, 1 mg	~550	410 / 500		**DMSO**	Violet
Calcein Blue FP-11141B, 25 mg	321.29	360 / 445		**DMSO**	Blue
Calcein Blue, AM FP-95397A, 1 mg	465.41			**DMSO**	
Calcein Green FP-466251, 100 mg	622.54	494 / 517	75 000	**DMSO,** +	Green Highly negatively charged, thus
Calcein Green, AM FP-895514, 1 mg	622.54			**DMSO,** +	Becomes fluorescent upon hydrolysis. Membrane-permeant
Calcein Orange FP-ZE7840, 1 mg	~880	525 / 550		**DMSO**	Orange
Calcein Red, AM FP-UVC460, 1 mg	~1016	562 / 576		**DMSO**	Red

Storage: stored desicated and protected from light at –20°C(M) .

Products Descriptions

Calcein Blue FP-11141A , 1g
8-[N,N-Bis(carboxymethyl)aminomethyl]-4-methylumbelliferone
CAS: 54375-47-2; MW: 321.29 (M)
Soluble in DMSO
$\lambda_{(exc./em.)}$: 360/445nm

Calcein Blue - AM FP-95397A , 25mg
CAS: 168482-84-6; MW: 465.41 (M)
Soluble in DMSO
$\lambda_{(exc./em.)}$(hydrolyzed): 360/445 nm
Ex (nm) 360 Em (nm) 445
MW 465.41 Solvent DMSO

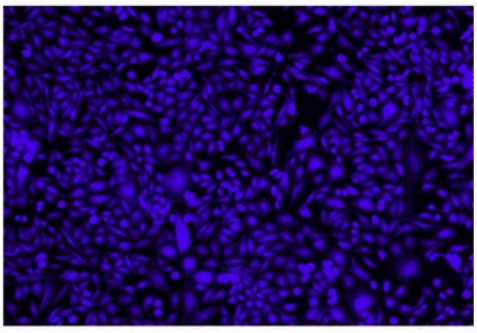

Image of CPA cells in a 96-well Costar black wall/clear bottom plate stained with Calcein blue, AM (DAPI filter),

Calcein Blue is easily soluble in alkaline solutions, but barely soluble in water (1 g/25 ml 1 M KOH, or /100 ml water). Its proton dissociation constants are reported to be pKa1=2.45, pKa2=7.24 and pKa3=11.3.
Calcein Blue solution emits bright blue fluorescence (lem=445 nm) at pH 4-11, but no fluorescence at pH 12 or higher. The blue fluorescence of the Calcein Blue solution at pH 4-11 is quenched by metal ions such as Co, Cu, Mn, Ni and Pb. However, Calcein Blue forms a highly fluorescent complex with alkaline earth metals at pH 12 or higher. Since the endpoint of the chelate titration is clear by UV irradiation at 200-370 nm in a dark room, highly stained sample can be used. Calcein Blue is also suitable to determine Fe and Zr ions. Calcein Blue-Zn chelate can detect 10 ppb of F-. Calcein Blue aqueous solution emits laser at 449-490 nm.

www.advion-interchim.com I biosciences@advion-interchim.com I + 33 4 70 03 73 06

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References:
Geraldine M. Huitink et all; Talanta, Vol.21, Issue 12, December 1974, Pages 1221-1229; On the properties of Calcein Blue; Abstract

Calcein Orange Diacetate FP-ZE7840, 1mg
MW ~880 (M)
Soluble in DMSO
$\lambda_{(exc./em.)}$: 525/550 nm
Calcein AM is one the most popular fluorescent probes used for labeling and monitoring cellular functions of live cells. However, the single color of Calcein AM makes it impossible to use this valuable reagent in the multicolor applications. For example, it is impossible to use Calcein AM in combination of GFP-tranfacted cells due to the same color to GFP. To address this color limitation of Calcein AM, the Calcein Orange and Calcein Red have been developed. These two new Calcein AM analogs enable the multicolor labeling and functional analysis of live cells in combination with Calcein AM.

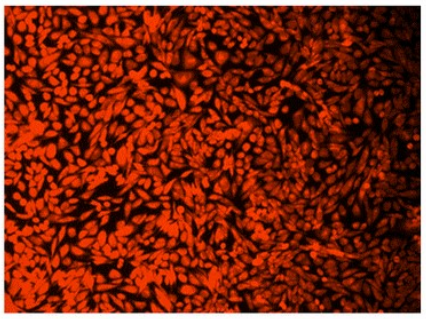

Image of CPA cells in a 96-well Costar black wall/clear bottom plate stained with Calcein Orange™ (TRITC filter).

Introduction

Similarly to **Calcein** dye, the calcein analogs are polyanionic derivate of fluorescein that exhibits fluorescence that is essentially independent of pH between 6.5 and 12. They are well retained in cells. These features have made it a popular and versatile dye for various applications, including cell volume changes in neurons and other cells, endocytosis, gap junctional communication, membrane integrity and permeability, angiography, liposomes…

Free acid and salt form are slightly soluble in water, so should be solubilized in organic solvents (DMSO). Ther are membrane-impermeant, but can be introduced into cells via microinjection.

AM ester form is soluble in organic solvents (DMSO). It is membrane-permeant and enters readily cell membranes, hence dye is introduced into cells via simple incubation.. Once inside the cells, calcein AM is hydrolyzed by intracellular esterases, converting it into highly fluorescent calcein.

The DMSO solution is more convenient (time saving, reduce solubilization variability) especially for more reproductible screening assays.

Directions for use

Handling and Storage

Free acid and salt form of calcein are soluble in DMSO, DMF and is slightly water soluble (pH>6).
AM form of calcein is susceptible to hydrolysis. It should be dissolved in DMSO .It should be prepared immediately before use and should be used with 12 hours, preferably within 3 to 4 hours.

Guidelines for use – for microscopy studies

Refer to the calcein technical sheet or the literature.

Related products

- Annexin V-FluoProbes 488, FP-BH9390
- Ethidium Homodimer I, FP-25810A
- Ethidium Homodimer III, FP-BP9340
- Hoechst 33342 (and others), FP-59046A
- Dihydroethidium, FP-52492A
- Cyclosporin A, >99% Multidrug Resistance Assay, FP-C71434
- Calcein FP-466251

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Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com/interchim/customers/
Please inquire for higher quantities (availability, shipment conditions).

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For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

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