

PRODUCT INFORMATION

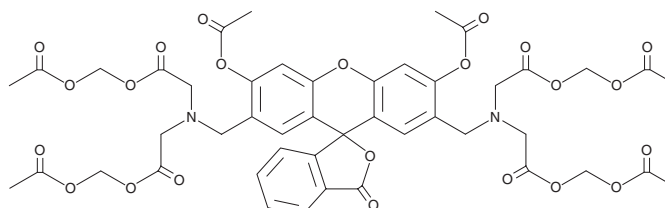


Calcein AM

Item No. 14948

CAS Registry No.: 148504-34-1
Formal Name: N,N'-[[3',6'-bis(acetyloxy)-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-2',7'-diyl]bis(methylene)]bis[N-[2-[(acetyloxy)methoxy]-2-oxoethyl]]-glycine, 1,1'-bis[(acetyloxy)methyl] ester
Synonyms: Calcein Acetoxymethyl ester, NSC 689290

MF: C₄₆H₄₆N₂O₂₃
FW: 994.9
Purity: ≥90%
Ex./Em. Max: 494/517 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Light sensitive



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Calcein AM is supplied as a crystalline solid. A stock solution may be made by dissolving the calcein AM in the solvent of choice, which should be purged with an inert gas. Calcein AM is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide. The solubility of calcein AM in these solvents is approximately 10 mg/ml.

Description

Calcein AM is a cell-permeable dye that, upon entering live cells, is cleaved by intracellular esterases, leaving membrane-impermeant calcein (Item No. 16221), a fluorescent indicator with absorption and emission maxima of 494 and 517 nm, respectively. It can be used as an indicator of cell viability, cell-cell communication, cytotoxicity, or changes in intracellular calcium, fluoride, iron, or mercury.^{1,2} As calcein is a substrate for multidrug resistance-associated protein 1 (MRP1) and multidrug resistance protein 3 (MDR3, P-glycoprotein 3), calcein AM is used to study these proteins and their regulation.³⁻⁵

References

1. Hynes, J., Floyd, S., Soini, A.E., *et al.* Fluorescence-based cell viability screening assays using water-soluble oxygen probes. *J. Biomol. Screen.* **8**, 264-272 (2003).
2. Sabnis, R.W. Handbook of biological dyes and stains: Synthesis and industrial applications. John Wiley & Sons, Inc., Hoboken, NJ, USA (2010).
3. Polli, J.W., Wring, S.A., Humphreys, J.E. *et al.* Rational use of *in vitro* P-glycoprotein assays in drug discovery. *J. Pharmacol. Exp. Ther.* **299**(2), 620-628 (2001).
4. Tiberghien, F. and Loor, F. Ranking of P-glycoprotein substrates and inhibitors by a calcein-AM fluorometry screening assay. *Anticancer Drugs* **7**(5), 568-578 (1996).
5. Szakices, G., Jakab, K., Antal, F., *et al.* Diagnostics of multidrug resistance in cancer. *Pathol. Oncol. Res.* **4**(4), 251-257 (2016).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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