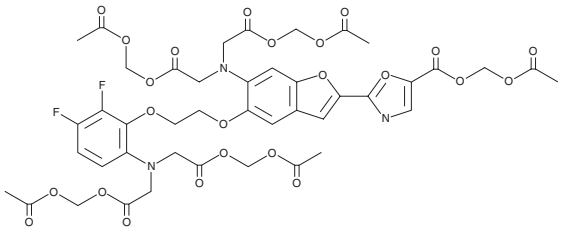
PRODUCT INFORMATION

Fura-FF AM

Item No. 20416

CAS Registry No.: 348079-12-9
Formal Name: 2-[6-[*bis*[2-[(acetyloxy)methoxy]-2-oxoethyl]amino]-5-[2-[6-[*bis*[2-[(acetyloxy)methoxy]-2-oxoethyl]amino]-2,3-difluorophenoxy]ethoxy]-2-benzofuranyl]-5-oxazolecarboxylic acid(acetyloxy)methyl ester
Synonym: Fura-FF Acetoxymethyl ester
MF: $C_{43}H_{43}F_2N_3O_{24}$
FW: 1,023.8
Purity: ≥90%
Supplied as: A solid
Storage: -20°C
Stability: ≥1 year
Special Conditions: Protect from light



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

Laboratory Procedures

Fura-FF AM is supplied as a solid. A stock solution may be made by dissolving the fura-FF AM in the solvent of choice. Fura-FF AM is soluble in DMSO, which should be purged with an inert gas.

Description

Fura-FF AM is a cell-permeable acetoxymethyl ester of the fluorescence calcium indicator fura-FF (potassium salt) (Item No. 20415). As fura-FF AM enters cells, it is hydrolyzed by intracellular esterases to produce fura-FF. Fura-FF is a difluorinated derivative of the calcium indicator fura-2 (Item Nos. 19531 | 20414). Unlike, fura-2, fura-FF has negligible magnesium sensitivity, thus reducing interference from this cation.[1] Fura-FF also has a higher calcium dissociation constant than fura-2 (K_d(calcium) = 6 and 0.14 µM, respectively).[1,2] However, the spectral properties of fura-FF and fura-2 are similar with fura-FF displaying excitation/emission spectra of 365/514 nm in the absence of calcium, with a shift to 339/507 nm in the presence of a high calcium concentration.[3] Low affinity calcium dyes, including fura-FF, are preferred for studying compartments with high concentrations of calcium, such as mitochondria, or in cell systems that have relatively low calcium buffering capacities, such as neuronal dendrites and spines.[4-6]

References

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2. Grynkiewicz, G., Poenie, M., and Tsien, R.Y. A new generation of Ca^{2+} indicators with greatly improved fluorescence properties. *J. Biol. Chem.* **260(6)**, 3440-3450 (1985).
3. Ruggiu, A.A., Bannwarth, M., and Johnsson, K. Fura-2FF-based calcium indicator for protein labeling. *Org. Biomol. Chem.* **8(15)**, 3398-3401 (2010).
4. Aponte, Y., Bischofberger, J., and Jonas, P. Efficient Ca^{2+} buffering in fast-spiking basket cells of rat hippocampus. *J. Physiol.* **586(8)**, 2061-2075 (2008).
5. Canepari, M., Vogt, K., and Zecevic, D., Combining voltage and calcium imaging from neuronal dendrites. *Cell. Mol. Neurobiol.* **28(8)**, 1079-1093 (2008).
6. Marcu, R., Neely, C. K., Karamanlidis, G., *et al.* Multi-parameter measurement of the permeability transition pore opening in isolated mouse heart mitochondria. *J. Vis. Exp.* **67**, (2012).

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