

Fura-FF, AM [Fura-2FF, AM] *CAS 348079-12-9*

 Catalog number: 21027
 Unit size: 10x50 ug

Component	Storage	Amount (Cat No. 21027)
Fura-FF, AM [Fura-2FF, AM] *CAS 348079-12-9*	Freeze (< -15 °C), Minimize light exposure	10x50 ug

OVERVIEW

Among the ratiometric calcium indicators, Fura-2 and Indo-1 are most commonly used. Fura-2 is excitation-ratioable while Indo-1 is emission-ratioable. Fura-2 is preferred for ratio-imaging microscopy, in which it is more practical to change excitation wavelengths than emission wavelengths. Upon binding Ca^{2+} , Fura-2 exhibits an absorption shift that can be observed by scanning the excitation spectrum between 300 and 400 nm, while monitoring the emission at ~510 nm. The cell-permeant Fura-2FF AM is an analog of Fura-2 AM with much lower calcium binding affinity, $K_d \sim 10 \mu\text{M}$. This AM ester form can be loaded into live cells noninvasively.

KEY PARAMETERS
Fluorescence microscope

Emission	Fura 2 filter set
Excitation	Fura 2 filter set
Recommended plate	Black wall/clear bottom

Fluorescence microplate reader

Cutoff	475
Emission	510
Excitation	340, 380
Recommended plate	Black wall/clear bottom
Instrument specification(s)	Bottom read mode/Programmable liquid handling

PREPARATION OF STOCK SOLUTIONS

Unless otherwise noted, all unused stock solutions should be divided into single-use aliquots and stored at -20 °C after preparation. Avoid repeated freeze-thaw cycles

Fura-FF AM Stock Solution

1. Prepare a 2 to 5 mM stock solution of Fura-FF AM in high-quality, anhydrous DMSO.

PREPARATION OF WORKING SOLUTION
Fura-FF AM Working Solution

1. On the day of the experiment, either dissolve Fura-FF AM in DMSO or thaw an aliquot of the indicator stock solution to room temperature.
2. Prepare a 2 to 20 μM Fura-FF AM working solution in a buffer of your choice (e.g., Hanks and Hepes buffer) with 0.04% Pluronic® F-127. For most cell lines, Fura-FF AM at a final concentration of 4-5 μM is recommended. The exact concentration of indicators required for cell loading must be determined empirically.

Note: The nonionic detergent Pluronic® F-127 is sometimes used to increase the aqueous solubility of Fura-FF AM. A variety of [Pluronic® F-127 solutions](#) can be purchased from AAT Bioquest.

Note: If your cells contain organic anion-transporters, probenecid (1-2 mM) may be added to the dye working solution (final in well concentration will be 0.5-1 mM) to reduce leakage of the de-esterified indicators. A variety of [ReadiUse™ Probenecid products](#), including water-soluble, sodium salt, and stabilized solutions, can be purchased from AAT Bioquest.

SAMPLE EXPERIMENTAL PROTOCOL

Following is our recommended protocol for loading AM esters into live cells. This protocol only provides a guideline and should be modified according to your specific needs.

1. Prepare cells in growth medium overnight.
2. On the next day, add 1X Fura-FF AM working solution to your cell plate.

Note: If your compound(s) interfere with the serum, replace the growth medium with fresh HHBS buffer before dye-loading.

3. Incubate the dye-loaded plate in a cell incubator at 37 °C for 30 to 60 minutes.

Note: Incubating the dye for longer than 1 hour can improve signal intensities in certain cell lines.

4. Replace the dye working solution with HHBS or buffer of your choice (containing an anion transporter inhibitor, such as 1 mM probenecid, if applicable) to remove any excess probes.
5. Add the stimulant as desired and simultaneously measure fluorescence using either a fluorescence microscope equipped with a Fura 2 filter set or a fluorescence plate reader containing a programmable liquid handling system such as a FlexStation, at $\text{Ex}/\text{Em}_1 = 340/510 \text{ nm}$ cutoff 475 nm and $\text{Ex}/\text{Em}_2 = 380/510 \text{ nm}$ cutoff 475 nm.

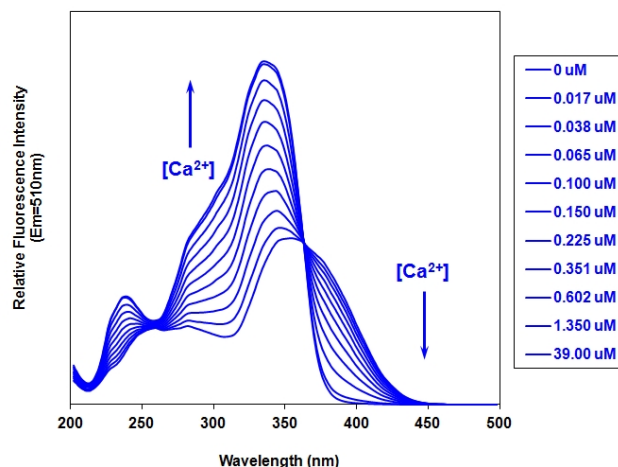
EXAMPLE DATA ANALYSIS AND FIGURES


Figure 1. Fluorescence excitation spectra of Fura-FF in the presence of 0 to 39 μM free Ca^{2+} .

DISCLAIMER

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