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# Fura-2, AM

| Catalog Number | Packaging Size |
|---|---|
| C224 | 1 mg |
| C226 | 1 ml |

**Storage upon receipt:** -20°C, protected from light

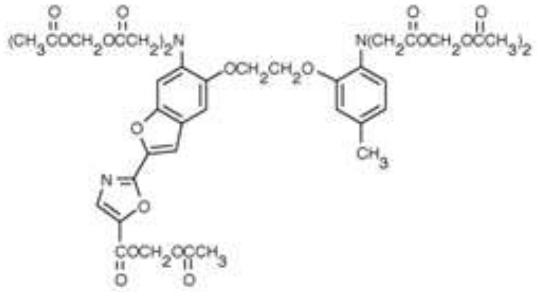
## Introduction

**Fura-2, AM** is a high affinity, intracellular calcium indicator that is ratiometric and UV light-excitable. This acetoxymethyl (AM) ester form is useful for noninvasive intracellular loading.

**Fura-2, AM** is supplied as 1 mg solid (**C224**), and 1 mg/mL solution in DMSO (**C226**).

## Specifications

| | |
|---|---|
| **Label:** | Fura-2 |
| **Ex/Em:** | 340, 380/505 nm |
| **Detection Method:** | Fluorescent |
| **Molecular Formula:** | $C_{44}H_{47}N_3O_{24}$ |
| **Molecular Weight:** | 1001.86 |
| **CAS Number:** | 108964-32-5 |
| **Storage Conditions:** | -20°C, protect from light |
| **Shipping Condition:** | Room Temperature |



## Applications

### Cell Loading Guideline

Note: The following protocol is provided as an introductory guide only. The detailed procedures can be found from literatures.[1,2]

1. Prepare a Fura-2 AM stock solution in anhydrous DMSO at 1-5 mM.
2. Dilute an aliquot of Fura-2 AM stock solution (1-5 mM) to a final concentration of 1-5 µM in the buffered physiological medium of choice. Addition of the non-ionic detergent Pluronic R F-127 can assist in dispersion of the nonpolar Fura-2 AM ester in aqueous media. This can be conveniently accomplished by mixing the aliquot of Fura-2 AM ester stock solution in DMSO with an equal volume of 20% (w/v) Pluronic in DMSO (Cat No. C021) before dilution into the loading medium, making the final Pluronic concentration about 0.02%.

3. The organic anion-transport inhibitors probenecid (1-2.5 mM) may be added to the cell medium to reduce leakage of the de-esterified indicator.
4. Cells are normally incubated with the Fura-2 AM ester for 15–60 minutes at 20–37°C. Exact loading concentration, time, and temperature will need to be determined empirically; in general it is desirable to use the minimum dye concentration required to yield fluorescence signals with adequate signal to noise. Subcellular compartmentalization, an inherent problem with the AM ester loading technique, is usually lessened by lowering the incubation temperature.
5. Before fluorescence measurements are commenced, cells should be washed in indicator-free medium (containing an anion transport inhibitor, if applicable) to remove any dye that is nonspecifically associated with the cell surface, and then incubated for a further 30 minutes to allow complete de-esterification of intracellular Fura-2 AM ester.

### High-Throughput Screening

Intracellular $Ca^{2+}$ measurements in 96-well and 384-well microplates are an essential tool for high-throughput pharmacological screening. Cell samples in microplate wells are loaded with the AM ester form of the indicator using protocol basically similar to those described in ***Cell Loading Guideline***.

## References:


1. Methods Cell Biol 40, 155 (1994);
2. *Cell Biology: A Laboratory Handbook, 2nd Edition*, J.E. Celis, Ed., Volume 3, pp 363–374, Academic Press (1998);