

Product datasheet

Fura-2 Calcium Flux Assay Kit - No Wash, Ratiometric ab176766

8 References 1 Image

Overview

Product name	Fura-2 Calcium Flux Assay Kit - No Wash, Ratiometric
Detection method	Fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Cell-based
Assay time	1h 20m
Species reactivity	Reacts with: Mammals, Other species
Product overview	<p>Fura-2 Calcium Flux Assay Kit ab176766 is a no-wash, ratiometric calcium assay that allows homogeneous measurement of intracellular calcium mobilization caused by activation of G-protein-coupled receptors (GPCR) or calcium channels. The assay is suitable for use with 96-well and 384-well microplates.</p> <p>In the Fura-2 calcium flux assay protocol, cells are pre-loaded with Fura-2 AM (which can cross the cell membrane). Once inside the cell, the lipophilic blocking groups of Fura-2 AM are cleaved by esterases, resulting in a negatively charged fluorescent dye that stays inside the cell.</p> <p>The excitation maxima of the dye shifts from 363 nm to 335 nm upon binding of the dye to calcium. The emission spectra is relatively unaffected. The change is most easily measured by comparing the emission at 510 nm on excitation separately at 380 nm and 340 nm.</p> <p>Measuring the ratio reduces the effects of uneven dye loading and cell numbers, dye leakage and photo bleaching, compared to measuring cellular calcium concentrations using a single wavelength dye like Fluo-8.</p> <p>Fura-2 calcium flux assay protocol summary:</p> <ul style="list-style-type: none"> - add Fura-2 solution to cells - incubate for 1 hr at 37°C, then for 20 min at room temp - analyze with a microplate reader at both Ex/Em 340/510 nm and Ex/Em 380/510nm
Notes	<p>This product is intended to be used for monitoring calcium fluctuations in vivo in live cells using the following HTS imaging plate readers: FLIPR™, FDSS, BMG NOVOstar™, FLEXStation, ViewLux, IN Cell Analyzer or Arrayscan.</p>
Platform	Microplate reader

Properties

Storage instructions

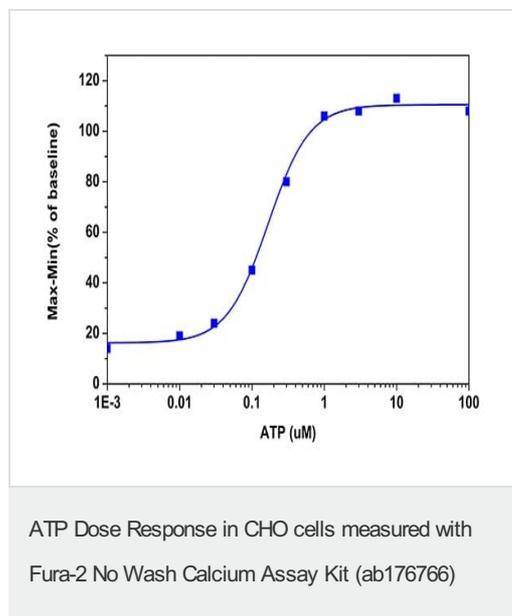
Store at -20°C. Please refer to protocols.

Components	10 x 96 tests	100 x 96 tests
10X Pluronic® F127 Plus	10 x 1ml	10 x 10ml
Fura-2 AM	1 vial	10 vials
HHBS	1 x 100ml	0 x 0ml

Relevance

Calcium is essential for all living organisms, where Ca^{2+} sequestration and release into and out of the cytoplasm functions as a signal for many cellular processes. 99% of calcium is found in bones and teeth with the remaining 1% found in the blood and soft tissue. Serum calcium levels are tightly controlled (8.4-11.4 mg/dL) and any variation outside this range can have serious effects. Calcium plays a role in mediating the constriction and relaxation of blood vessels, nerve impulse transmission, muscle contraction, and hormone secretion. Calcium ion channels control the migration of calcium ions across cell membranes, permitting the activation and inhibition of a wide variety of enzymes. Causes of low calcium levels include chronic kidney failure, vitamin D deficiency, and low blood magnesium levels that can occur in severe alcoholism.

Images



CHO-K1 cells were seeded overnight at 40,000 cells/100 μL /well in a Costar black wall/clear bottom 96-well plate. The cells were incubated with 100 μL of the Fura-2 No Wash Calcium Assay Kit (ab176766) for 1 hour at room temperature. ATP (50 μL /well) was added to achieve the final indicated concentrations.

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