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Fura-2 AM, green fluorescent calcium indicator

http://www.lumiprobe.com/p/fura-2-am

Fura-2 AM is a classic ratiometric fluorescent indicator for calcium ions, used to monitor intracellular Ca^{2+} concentrations in living cells. Thanks to its AM-ester form, the dye readily permeates the cell membrane and, following hydrolysis by intracellular esterases, is retained within the cytoplasm. Fura-2 is characterized by a shift in its excitation spectrum upon binding calcium and is typically measured in a 340/380 nm ratiometric mode, with emission occurring at approximately 510 nm. This dye enables quantitative analysis of calcium signals and corrects for artifacts associated with non-uniform dye loading, cell thickness, and photobleaching.

Compared to Fluo-4 AM, Fura-2 AM provides more accurate and reproducible measurements of basal calcium levels and slow changes in Ca^{2+} concentration, thanks to its ratiometric approach. Conversely, Fluo-4 AM exhibits significantly higher brightness and is compatible with the standard 488 nm lasers found in confocal microscopes, making it the preferred choice for detecting rapid calcium transients and for high-throughput screening. Fura-2 AM is more frequently used in applications where quantitative determination of calcium concentration is critical, whereas Fluo-4 AM is better suited for highly sensitive visualization of dynamic signals.

General properties

Appearance:	lemon powder
Molecular weight:	1001.86
CAS number:	108964-32-5
Molecular formula:	$C_{44}H_{47}N_3O_{24}$
Solubility:	good in DMSO, methylene, and acetonitrile; poor in alcohols
Quality control:	NMR ^1H and HPLC-MS (95+%)
Storage conditions:	24 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate.
Legal statement:	This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products.