

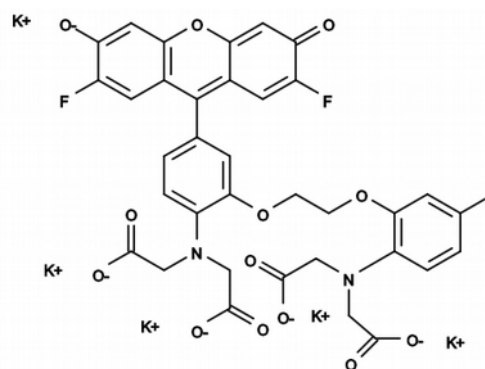


Fluo-4 pentapotassium salt

Commonly used visible light-excitable calcium indicator with increased fluorescence fluorescence signal level compared to Fluo-3

Product Description

Name :	Fluo-4 pentapotassium salt
Catalog Number :	FP-M20201, 10 x 50 µg FP-M2020A, 500 µg FP-M20202, 1 mg
Structure & Properties:	MW= 927.09 g/mol
physical	Soluble: in water or DMSO
optical	Absorption / Emission: $\lambda_{exc}/\lambda_{em} = 494\text{nm}/516\text{nm}$ (low or high [Ca ²⁺])
other	EC (494 nm) = 82,000 M⁻¹ cm⁻¹ K_d of Ca²⁺-Binding :~335 nM
Storage:	Store desiccated at 4 °C upon receipt. Protect from light, especially when in solution.



Introduction

Fluo-4 has its absorption maximum at 494 nm, thus making it excitable by the argon-ion laser. Fluo-4 is essentially nonfluorescent without Ca²⁺ present, but the fluorescence increases at least 100 times on Ca²⁺ binding. Also, because Fluo-4 binds Ca²⁺ more weakly (higher K_d) than do fura-2 and indo-1, it is more useful for measuring high transient Ca²⁺ concentration during Ca²⁺ spikes. Fluo-4 pentapotassium salt is membrane-impermeant but can be loaded into cells via microinjection or scrape loading.

Directions for use

Guidelines for use

To determine either the free calcium concentration of a solution or the K_d of a single-wavelength calcium indicator, the following equation is used:

$$[\text{Ca}]_{\text{free}} = K_d \frac{[F - F_{\text{min}}]}{F_{\text{max}} - F}$$

Where F is the fluorescence of the indicator at experimental calcium levels, F_{min} is the fluorescence in the absence of calcium and F_{max} is the fluorescence of the calcium-saturated probe. The dissociation constant (K_d) is a measure of the affinity of the probe for calcium. The Ca²⁺-binding and spectroscopic properties of fluorescent indicators vary quite significantly in cellular environments compared to calibration solutions. In situ calibrations of

FT-M20201

intracellular indicators typically yield K_d values significantly higher than *in vitro* determinations. In situ calibrations are performed by exposing loaded cells to controlled Ca^{2+} buffers in the presence of ionophores such as A-23187, 4-bromo A-23187 and ionomycin. Alternatively, cell permeabilization agents such as digitonin or Triton® X-100 can be used to expose the indicator to the controlled Ca^{2+} levels of the extracellular medium.

Technical and scientific information

References

- Gee, K.R., *et al.* Cell Calcium. 27, 97(2000).

Related products

- Fluo-3 AM, FP-78932A
- Fluo-3 pentapotassium salt, FP-03669A
- A-23187, FP-28362A
- 4-Bromo-calcium Ionophore A23187, FP-372221
- Ionomycin, FP-53989A

Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>.

Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

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