Quin-2

Product Information

Product name cat.number	MW ($g \cdot mol^{-1}$)	$\lambda_{exc}\backslash\lambda_{em}$ max. Free (nm)	$\lambda_{exc}\backslash\lambda_{em}$ max. High Ca^{2+} (nm)	mol. abs. ($M^{-1}cm^{-1}$)	Kd (nM)	Soluble in
Quin2, AM ester FP-405125, 1mg	830		354 / 450 (a)	5000		DMSO
Quin2 K salt FP-AY6580, 5mg	542		354 / 450 (b)		20nM 115nM (c)	Water >pH6

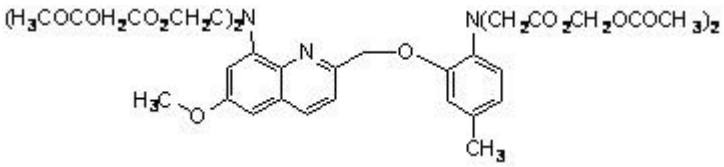
(a) after hydrolysis

(b) high [Ca2+]

(c) EC with 1mM Mg2+: 333 / 495nm

Storage:

Indicator salts can be stored desiccated and protected from light at +4°C (K) or –20°C >1 year. (L)
AM esters can be stored desiccated and protected from light at –20°C > 6 months. (M)



Structure of AM ester (FP-40512):

Quin-2 was one of the first high Ca_{2+} indicator developed by Tsien. It can be used in standard applications (review /Tsien and Pozan 1989), but requires higher loading concentrations than fura-2, indo-1, fluo-3 and fluo-8 because of its lower absorption and quantum yield. This may cause undesired effects (buffering intracellular Ca2+ transients), but is taken to good account in specific applications: depletion of cytosolic Ca2+, elicit unidirectional Ca^{2+} influx,...

Quin2 is available as high-purity salt that are membrane-impermeant, but can be loaded into cells via microinjection or scrape loading, and as AM ester taht is membrane-permeant for simplier loading.

Handling and Storage

Stock solutions of the salts may be prepared in distilled water or aqueous buffers (pH>6) and stored frozen (-20°C) and protected from light; these solutions should be stable for at least six months.

LIFE SCIENCES
interchim®
211bis Avenue J.F. Kennedy - BP 1140 - 03103 Montluçon Cedex - France
S.A. a conseil de surveillance 1.548.000 euro - RCS Montluçon 917 050 171 -APE 4669B

FT-405126 (+NT_AMesters)
AM esters should be reconstituted in anhydrous dimethylsulfoxide (DMSO) then used as soon as possible thereafter (within a week) to avoid hydrolysis with subsequent loss of cell loading capacity. DMSO stock solutions of AM esters should be frozen and dessicated and protect from light.

Protocols may found in the literature, and in our technical notice NT-AM_esters (laoding, Ca measurment)

References

1. **Callaham DA, Hepler PK.** "Measurement of Free Calcium in Plant Cells." *Cellular Calcium: A Practical Approach, McCormack JG, Cobbold PH, Eds*. pp. 383-410 (1991) PN27615
2. **Gilroy S**. *et al*., A Comparison between Quin-2 and Aequorin as Indicators of Cytoplasmic Calcium Levels in Higher Plant Cell Protoplasts, *Plant Physiology*; 90: 482 – 491 (1989) Article
3. **Jones Jr EB**, *et al*. "Enhancement and Quenching of Fluorescence of Quin-2 by Metal Ions." *J Inorganic Biochem* 45, 85 (1992) PN14533.
4. **Kao LS and Schneider AS**, Calcium mobilization and catecholamine secretion in adrenal chromaffin cells. A Quin-2 fluorescence study, *J. Biol. Chem*.; 261: 4881 - 4888 (1986) Article
5. **Kao JP**. "Practical aspects of measuring [Ca2+] with fluorescent indicators." Methods Cell Biol 40, 155-181 (1994) PN28510. PubMed ·
6. **Nitta K, Watanabe A**. "Determination of calcium ions tightly bound to proteins." *J Chromatogr* 585, 173-176 (1991) PN24598. PubMed ·
7. **Szmacinski H**, *et al*. "Fluorescence Lifetime Imaging of Intracellular Calcium." *J Fluorescence* 3, 161 (1993) PN17380.
8. **Tikunova SB** *et al.* Designing calcium-sensitizing mutations in the regulatory domain of cardiac troponin C, *J Biol Chem* 279, 35341-52 (2004) PN56337. PubMed · Article
9. **Tsien R, Pozzan T**. "Measurement of cytosolic free Ca2+ with quin2." *Methods Enzymol* 172, 230-262 (1989) PN11228. PubMed
10. **Van den Bergh V**, *et al*. "Photophysics of the Fluorescent Ca^{2+} Indicator Quin-2." *Photochem Photobiol* 61, 442 (1995) PN30654
11. **White J**. *et al*., Direct Demonstration of Increased Intracellular Concentration of Free Calcium as Measured by Quin-2 in Stimulated Rat Peritoneal Mast Cell, *PNAS*; 81: 3978 - 3982 (1984) Article
12. **Yu BZ**, *et al*. "Catalytic significance of the specificity of divalent cations as KS* and kcat* cofactors for secreted phospholipase A2." *Biochemistry* 37, 12576-12587 (1998) PN30917. PubMed ·

Related Products

- Fura-2 AM, FP-42776C
- Fluo-3 AM, FP-78932A
- Fluo-8, CJ2560

Ordering Information

Catalog size quantities and prices may be found at http://www.fluoprobes.com
Please inquire for higher quantities (availability, shipment conditions).

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

REV : G08E

LIFE SCIENCES interchim®
211bis Avenue J.F. Kennedy - BP 1140 - 03103 Montluçon Cedex - France
S.A. a conseil de surveillance 1.548.000 euro - RCS Montluçon 917 050 171 -APE 4669B