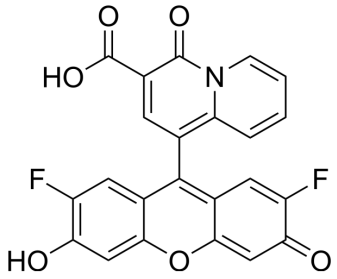
KMG-104

Cat. No.:	HY-139646
CAS No.:	852057-94-4
Molecular Formula:	$C_{23}H_{11}F_2NO_6$
Molecular Weight:	435.33
Target:	Fluorescent Dye
Pathway:	Others
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (114.86 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2971 mL	11.4855 mL	22.9711 mL
	5 mM	0.4594 mL	2.2971 mL	4.5942 mL
	10 mM	0.2297 mL	1.1486 mL	2.2971 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.74 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.74 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

KMG-104 is a highly selective fluorescent Mg^{2+} probe. KMG-104 has been used widely and revealed Mg^{2+} mobilization in cytoplasm in various types of cells[1].

In Vitro

KMG-104 is useful for confocal laser scanning microscopy because it is excited at 490 nm, and emitted fluorescence around 510 nm. Fluorescent intensity of KMG-104 increases with [Mg] increase, and it shows no response to Na, K, and Ca; the dissociation constant (K_d) for Mg is 3 mM. KMG-104 is able to trace only [Mg] change inphysiological conditions[2].
PC12 cells are loaded with a novel Mg indicator KMG-104 and Ca indicator fura-2, and intracellular Mg is studied in the endoplasmic reticulums (ERs), mitochondria, and Mg-ATP[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Kubota T, et al. Investigation of intracellular magnesium mobilization pathways I PC12 cells B simultaneous Mg-Ca fluorescent imaging. J Am Coll Nutr. 2004;23(6):742S-4S.

[2]. Fujii T, et al. Design and synthesis of a FlAsH-type Mg2+ fluorescent probe for specific protein labeling. J Am Chem Soc. 2014;136(6):2374-2381.

Caution: Product has not been fully validated for medical applications. For research use only.

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