CALP3

Cat. No.: HY-P1075

CAS No.: 261969-05-5

Molecular Formula: $C_{44}H_{68}N_{10}O_9$

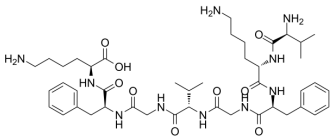
Molecular Weight: 881.07

Sequence Shortening: VKFGVGFK

Target: Calcium Channel

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage: Sealed storage, away from moisture
Powder -80°C 2 years
-20°C 1 year
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 12.5 mg/mL (14.19 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	1.1350 mL	5.6749 mL	11.3498 mL
	5 mM	0.2270 mL	1.1350 mL	2.2700 mL
	10 mM	0.1135 mL	0.5675 mL	1.1350 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: ≥ 1.25 mg/mL (1.42 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (1.42 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (1.42 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CALP3, a Ca^{2+}-like peptide, is a potent Ca^{2+} channel blocker that activates EF hand motifs of Ca^{2+}-binding proteins. CALP3 can functionally mimic increased $[Ca^{2+}]_i$ by modulating the activity of Calmodulin (CaM), Ca^{2+} channels and pumps. CALP3 has the potential in controlling apoptosis in diseases such as AIDS or neuronal loss due to ischemia[1][2].

In Vitro

CALP3 (50, 100, 150, 200 μM) inhibits glutamate caused a large sustained increase in $[Ca^{2+}]_i$ in a dose-dependent manner (IC_{50}=37.25 μM) in Fura-2-loaded neuronal cultures[1].

CALP3 (50, 100, 150, 200 μM) inhibits glutamate-induced cytotoxicity in a dose-dependent manner (IC_{50}=50.97 μM) in cultured rat neocortical neurons. CALP3 causes dose-dependent inhibition of apoptosis (IC_{50}=33.41 μM)[1].
CALP3 (100 μM) inhibits apoptosis induced by HIV gp120 and SAg in Human T cells[1].
CALP3 (100 μM; 15 min pretreatment) reduces gossypol-induced necrosis and increases the fraction of live cells[2].
Cyclic-CALP3 is synthesized starting from Fmoc-Asp(PEG-PS)-OAl. Cyclic CALP3 is unable to inhibit Ca21 influx, and this peptide served as a negative control. Cyclic CALP3 does not inhibit the effect of glutamate[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Mbio. 2022 Apr 21;e0069022.

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REFERENCES

[1]. Manion MK, et al. A new type of Ca(2+) channel blocker that targets Ca(2+) sensors and prevents Ca(2+)-mediated apoptosis. FASEB J. 2000 Jul;14(10):1297-306.

[2]. Ferdek PE, et al. BH3 mimetic-elicited Ca2+ signals in pancreatic acinar cells are dependent on Bax and can be reduced by Ca^{2+}-like peptides. Cell Death Dis. 2017 Mar 2;8(3):e2640.

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