Apamin

Cat. No.: HY-P0256

CAS No.: 24345-16-2

Molecular Formula: $C_{79}H_{131}N_{31}O_{24}S_4$

Molecular Weight: 2027.34

Sequence: Cys-Asn-Cys-Lys-Ala-Pro-Glu-Thr-Ala-Leu-Cys-Ala-Arg-Arg-Cys-Gln-Gln-His-NH2 (Disulfide bridge: Cys1-Cys11;Cys3-Cys15)

Sequence Shortening: CNCKAPETALCARRCQQH-NH2 (Disulfide bridge: Cys1-Cys11;Cys3-Cys15)

Target: Potassium Channel

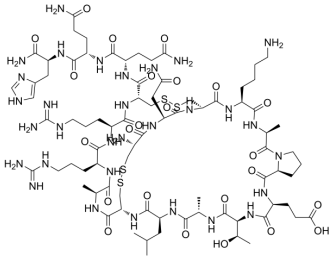
Pathway: Membrane Transporter/Ion Channel

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

H_2O : 100 mg/mL (49.33 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.4933 mL	2.4663 mL	4.9326 mL
5 mM	0.0987 mL	0.4933 mL	0.9865 mL
10 mM	0.0493 mL	0.2466 mL	0.4933 mL

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

BIOLOGICAL ACTIVITY

Description

Apamin (Apamine) is an 18 amino acid peptide neurotoxin found in apitoxin (bee venom), is known as a specifically selective blocker of Ca^{2+}-activated K^+ (SK) channels and exhibits anti-inflammatory and anti-fibrotic activity[1].

IC_{50} & Target

K^+ channel[1]

In Vitro

Apamin (0.5-2 μg/mL; 24 hours; HSC-T6 cells) treatment markedly reduces the expression of α-SMA in the TGF-β1-induced HSC-T6 cells. Apamin treatment abrogats the activation of p-Smad2/3 and Smad4 induced by TGF-β1[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	HSC-T6 cells

Concentration:	0.5 μg/mL, 1 μg/mL and 2 μg/mL
Incubation Time:	24 hours
Result:	Markedly reduced the expression of α-SMA in the TGF-β1-induced HSC-T6 cells. Abrogated the activation of p-Smad2/3 and Smad4 induced by TGF-β1.

In Vivo

Apamin (0.1 mg/kg; intraperitoneal injection; twice a week; for 4 weeks; C57BL/6 male mice) treatment results in decreased liver injury and proinflammatory cytokine levels. Apamin suppresses the deposition of collagen, proliferation of BECs and expression of fibrogenic genes in the 3,5-diethoxycarbonyl-1,4-dihydrocollidine (DDC)-fed mice[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	8-week-old C57BL/6 male mice (20-25 g) with DDC feeding[1]
Dosage:	0.1 mg/kg
Administration:	Intraperitoneal injection; twice a week; for 4 weeks
Result:	Resulted in decreased liver injury and proinflammatory cytokine levels. Suppressed the deposition of collagen, proliferation of BECs and expression of fibrogenic genes in the DDC-fed mice.

CUSTOMER VALIDATION

- Cell Calcium. 2022 Jun;104:102571.

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REFERENCES

[1]. Kim JY, et al. Apamin suppresses biliary fibrosis and activation of hepatic stellate cells. Int J Mol Med. 2017 May;39(5):1188-1194.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA