

## Apamin TFA

<b>Cat. No.:</b>	HY-P0256A
<b>Molecular Formula:</b>	C <sub>81</sub> H <sub>132</sub> F <sub>3</sub> N <sub>31</sub> O <sub>26</sub> S <sub>4</sub>
<b>Molecular Weight:</b>	2141.36
<b>Sequence:</b>	Cys-Asn-Cys-Lys-Ala-Pro-Glu-Thr-Ala-Leu-Cys-Ala-Arg-Arg-Cys-Gln-Gln-His-NH <sub>2</sub> (Disulfide bridge: Cys1-Cys11;Cys3-Cys15) <small>CNCKAPETALCARRCQQH-NH<sub>2</sub> (Disulfide bridge: Cys1-Cys11;Cys3-Cys15) (TFA salt)</small>
<b>Sequence Shortening:</b>	CNCKAPETALCARRCQQH-NH <sub>2</sub> (Disulfide bridge: Cys1-Cys11;Cys3-Cys15)
<b>Target:</b>	Potassium Channel
<b>Pathway:</b>	Membrane Transporter/Ion Channel
<b>Storage:</b>	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

<b>In Vitro</b>	H <sub>2</sub> O : 50 mg/mL (23.35 mM); Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent Concentration</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>1 mM</b>		0.4670 mL	2.3350 mL	4.6699 mL
		<b>5 mM</b>		0.0934 mL	0.4670 mL	0.9340 mL
		<b>10 mM</b>		0.0467 mL	0.2335 mL	0.4670 mL
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (46.70 mM); Clear solution; Need ultrasonic					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Apamin TFA (Apamine TFA) is an 18 amino acid peptide neurotoxin found in apitoxin (bee venom), is known as a specifically selective blocker of Ca <sup>2+</sup> -activated K <sup>+</sup> (SK) channels and exhibits anti-inflammatory and anti-fibrotic activity <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	K <sup>+</sup> channel <sup>[1]</sup>
<b>In Vitro</b>	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 abrogates the activation of p-Smad2/3 and Smad4 induced by TGF-β1 <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Western Blot Analysis <sup>[1]</sup>

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 $\alpha$ -SMA in the TGF- $\beta$ 1-induced HSC-T6 cells. Abrogated the activation of p-Smad2/3 and Smad4 induced by TGF- $\beta$ 1.

#### 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<sup>[1]</sup>. 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 <sup>[1]</sup>
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.**

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