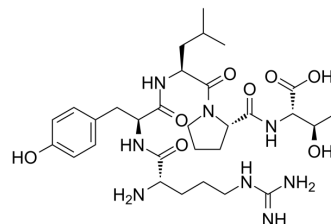


## Proctolin

Cat. No.:	HY-P0275
CAS No.:	57966-42-4
Molecular Formula:	C <sub>30</sub> H <sub>48</sub> N <sub>8</sub> O <sub>8</sub>
Molecular Weight:	648.75
Sequence:	Arg-Tyr-Leu-Pro-Thr
Sequence Shortening:	RYLPT
Target:	Others
Pathway:	Others
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 <sub>2</sub> O : 100 mg/mL (154.14 mM; Need ultrasonic)					
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
			1 mM	1.5414 mL	7.7071 mL	15.4143 mL
			5 mM	0.3083 mL	1.5414 mL	3.0829 mL
			10 mM	0.1541 mL	0.7707 mL	1.5414 mL
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: PBS Solubility: ≥ 100 mg/mL (154.14 mM); Clear solution					

### BIOLOGICAL ACTIVITY

Description	Proctolin is an endogenous pentapeptide that acts as an excitatory neuromodulator.
In Vitro	Proctolin can increase the frequency of action potentials, increase the amplitude of muscle contraction, and initiate activity in quiescent systems <sup>[1]</sup> . In the arthropods, Proctolin acts as a neuromodulator and possibly as a neurohormone. It does not appear to function as a conventional neurotransmitter <sup>[2]</sup> . Proctolin is a pentapeptide with the mature peptide of RYLPT, and it is the first insect neuropeptide to be sequenced and chemically characterized. The first identification of a Proctolin precursor gene is CG7105 in <i>D. melanogaster</i> . Although a previous study showed that Proctolin is absent in <i>B. mori</i> , this pentapeptide is recently identified in a proteomic analysis of <i>B. mori</i> wings. However, the <i>Bombyx</i> Proctolin gene does not produce a mature peptide because cleavage sites are not present at the N-terminal and C-terminal of the RYLPT sequence, and a similar gene is observed in <i>C. suppressalis</i> . Therefore, a true Proctolin has been considered to be not observed in <i>B.</i>

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mori and *C. suppressalis*<sup>[3]</sup>.

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

## CUSTOMER VALIDATION

- iScience. 2 July 2022, 104697.

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## REFERENCES

[1]. McGrath LL, et al. De novo transcriptome assembly for the lobster *Homarus americanus* and characterization of differential gene expression across nervous system tissues. *BMC Genomics*. 2016 Jan 16;17:63.

[2]. Orchard I, et al. Proctolin: a review with emphasis on insects. *J Neurobiol*. 1989 Jul;20(5):470-96.

[3]. Xu G, et al. Identification and expression profiles of neuropeptides and their G protein-coupled receptors in the rice stem borer *Chilo suppressalis*. *Sci Rep*. 2016 Jun 29;6:28976.

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**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](mailto:tech@MedChemExpress.com)

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