

## $\alpha$ -Conotoxin GID

Cat. No.:	HY-P5147
CAS No.:	547741-78-6
Molecular Formula:	C <sub>84</sub> H <sub>132</sub> N <sub>30</sub> O <sub>31</sub> S <sub>4</sub>
Molecular Weight:	2186.39
Sequence:	Ile-Arg-Asp-{Gla}-Cys-Cys-Ser-Asn-Pro-Ala-Cys-Arg-Val-Asn-Asn-{Hyp}-His-Val-Cys (Disulfide bridge Cys5-Cys11, Cys6-Cys19)
Sequence Shortening:	IRD-{Gla}-CCSNPACRVNN-{Hyp}-HVC (Disulfide bridge Cys5-Cys11, Cys6-Cys19)
Target:	nAChR
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

### BIOLOGICAL ACTIVITY

Description	$\alpha$ -Conotoxin GID is a paralytic peptide neurotoxin and a selective antagonist of nAChR, with IC <sub>50</sub> s of 5 nM ( $\alpha$ 7), 3 nM ( $\alpha$ 3 $\beta$ 2) and 150 nM ( $\alpha$ 4 $\beta$ 2), respectively. $\alpha$ -Conotoxin GID is small disulfide-rich peptide, with potential to inhibit chronic pain. $\alpha$ -Conotoxin GID contains a C-terminal carboxylate, thus substitution with a C-terminal carboxamide results in loss of $\alpha$ 4 $\beta$ 2 nAChR. $\alpha$ -Conotoxin GID can be isolated from the Conus species <sup>[1][2][3]</sup> .
IC <sub>50</sub> & Target	IC50: 5 nM ( $\alpha$ 7), 3 nM ( $\alpha$ 3 $\beta$ 2) and 150 nM ( $\alpha$ 4 $\beta$ 2) <sup>[1]</sup>

### REFERENCES

- [1]. Armishaw CJ. Synthetic  $\alpha$ -conotoxin mutants as probes for studying nicotinic acetylcholine receptors and in the development of novel drug leads. *Toxins* (Basel). 2010 Jun;2(6):1471-99.
- [2]. Millard EL, et al. Inhibition of neuronal nicotinic acetylcholine receptor subtypes by alpha-Conotoxin GID and analogues. *J Biol Chem*. 2009 Feb 20;284(8):4944-51.
- [3]. Nicke A, et al. Isolation, structure, and activity of GID, a novel alpha 4/7-conotoxin with an extended N-terminal sequence. *J Biol Chem*. 2003 Jan 31;278(5):3137-44.

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

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