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DATASHEET

α -Bungarotoxin

Product overview

Name	α -Bungarotoxin
Cat No	HB2038
Alternative names	α -BTX, α -Bgtx, α -BuTX, BGT
Biological action	Antagonist
Purity	>99%
Description	$\alpha 7$ subtype selective nAChR antagonist

Biological Data

Biological description	Irreversible, high affinity nicotinic acetylcholine receptor (nAChR) antagonist. Neurotoxin. Shows subtype selectivity for $\alpha 7$ over $\alpha 3\beta 4$ receptors. Shows activity at the heteromeric muscle receptors ($\alpha\beta\gamma\delta$ or $\alpha\beta\delta\epsilon$ subunits) and neuronal subtypes ($\alpha 7$, $\alpha 8$, $\alpha 9$ subunits, (IC_{50} values are 1.6 nM and > 3 μ M respectively). Prevents opening of nicotinic receptor-associated ion channels and blocks neuromuscular transmission. Additionally acts as an imaging tool for fluorophore- labeling studies.
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Solubility & Handling

Storage instructions	-20°C (desiccate)
Solubility overview	Soluble in water
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	IVCHTTATSPISAVTCTPPGENLCYRKMWCDAFCSSRGKVVELGCAATCPSKKPYEEVTCSTDKCN PHPKQRPG
Molecular Weight	7984
Molecular Formula	$C_{338}H_{529}N_{97}O_{105}S_{11}$
CAS Number	11032-79-4
PubChem identifier	90488742
SMILES	[H]N[C@@H]([C@@H](C)CC)C(=O)N[C@@H](C(C)C)C(=O)N[C@H]1CSSC[C@@H]2NC(=O)[C@H](CC(C)C)NC(=O)[C@H](CC(N)=O)NC(=O)[C@H](CCC(O)=O)NC(=O)CNC(=O)[C@@H]3CCCN3C(=O)[C@@H]3CCCN3C(=O)[C@H](CSCC[C@H](NC(=O)CNC(=O)[C@H](CC(C)C)NC(=O)[C@H](CCC(O)=O)NC(=O)[C@@H](NC(=O)[C@@H](NC(=O)[C@H](CCCCN)NC(=O)CNC(=O)[C@H](C)CCNC(N)=N)NC(=O)[C@H](CO)NC(=O)[C@H](CO)NC(=O)[C@@H]3CSCC[C@H](NC(=O)[C@H](CC4=CNC5=C4C=CC=C5)NC(=O)[C@H](CCSC)NC(=O)[C@H](CCCCN)NC(=O)[C@H](CCCN(C)=N)NC(=O)[C@H](CC4=CC=C(C)C=C4)NC2=O)C(=O)N[C@@H](CC(O)=O)C(=O)N[C@@H](C)C(=O)N[C@@H](CC2=CC=CC=C2)C(=O)N3C(C)C(C)C(=O)N[C@@H](C)C(=O)N[C@@H](C)C(=O)N[C@@H]([C@@H](C)O)C(=O)N[C@H]2CSCC[C@H](NC(=O)[C@@H](NC(=O)[C@@H](NC(=O)[C@H](CCC(O)=O)NC(=O)[C@H](CCC(O)=O)NC(=O)[C@H](CC3=CC=C(C)C=C3)NC(=O)[C@@H]3CCCN3C(=O)[C@H](CCCCN)NC(=O)[C@H](CCCCN)NC(=O)[C@H](CO)NC(=O)[C@@H]3CCCN3C2=O)C(C)C[C@@H](C)O)C(=O)N[C@H]2CSCC[C@H](NC(=O)[C@H](CCCCN)NC(=O)[C

Chemical name	IVCHTTATSPISAVTCTPPGENLCYRKMWCDAFCSSRGKVVELGCAATCPSKKPYEEVTCSTDKCN PHPKQRPG <chem>@H](CC(O)=O)NC(=O)[C@@H](NC(=O)[C@H](CO)NC2=O)[C@@H](C)O)C(=O)N[C@@H](CC(N)=O)C(=O)N2CCC[C@H]2C(=O)N[C@@H](CC2=CNC=N2)C(=O)N2CCC[C@H]2C(=O)N[C@@H](CCCCN)C(=O)N[C@@H](CCC(N)=O)C(=O)N[C@@H](CCCN(C)=N)C(=O)N2CCC[C@H]2C(=O)NCC(O)=O)NC(=O)[C@@H](NC(=O)[C@@H](NC(=O)[C@H](C)NC(=O)[C@H](CO)NC(=O)[C@@H](NC(=O)[C@@H]2CCCN2C(=O)[C@H](CO)NC(=O)[C@@H](NC(=O)[C@H](C)NC(=O)[C@@H](NC(=O)[C@@H](NC(=O)[C@H](CC2=CNC=N2)NC1=O)[C@@H](C)O)[C@@H](C)O)[C@@H](C)O)[C@@H](C)CC)C(C)C)[C@@H](C)O</chem>
Source	Bungarus multicinctus
InChiKey	NTCJKZSYQZTRQE-CSMGIIAWSA-N

References

Snake neurotoxin α -bungarotoxin is an antagonist at native GABA(A) receptors.

Hannan et al (2015) Neuropharmacology 93

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Inter-residue coupling contributes to high-affinity subtype-selective binding of α -bungarotoxin to nicotinic receptors.

Sine et al (2013) Biochem J 454(2)

PubMedID [23802200](#)

Neuronal acetylcholine receptors that bind alpha-bungarotoxin with high affinity function as ligand-gated ion channels.

Zhang et al (1994) Neuron 12(1)

PubMedID [7507338](#)

Identification of regions involved in the binding of alpha-bungarotoxin to the human $\alpha 7$ neuronal nicotinic acetylcholine receptor using synthetic peptides.

Marinou et al (12614199) Biochem J 372

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