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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	α7 subtype selective nAChR antagonist

Biological Data

Biological description

Irreversible, high affinity nicotinic acethylcholine receptor (nAChR) antagonist. Neurotoxin. Shows subtype selectivity for α7 over α3β4 receptors.

Shows activity at the heteromeric muscle receptors (αβγδ or αβδε subunits) and neuronal subtypes (α7, α8, α9 subunits, (IC_{50} values are 1.6 nM and > 3 μM respectively).

Prevents opening of nicotinic receptor-associated ion channels and blocks neuromuscular transmission. Additionally acts as an imaging tool for fluorophore- labeling studies.

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	IVCHTTATSPISAVTCPPGENLCYRKMWCDAFCSSRGKVVELGCAATCPSKKPYEEVTCCSTDKCNPHPKQRPG
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](CSSC[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](CCCNC(N)=N)NC(=O)[C@H](CO)NC(=O)[C@H](CO)NC(=O)[C@@H]3CSSC[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](CCCNC(N)=N)NC(=O)[C@H](CC4=CC=C(O)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)N3)C(C)C)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]2CSSC[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(O)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]2CSSC[C@H](NC(=O)[C@H](CCCCN)NC(=O)[C@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](CCCNC(N)=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
Source	Bungarus multicinctus
InChiKey	NTCJKZSYQTZRQE-CSMGIIAWSA-N

References

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

Hannan et al (2015) Neuropharmacology 93
PubMedID 25634239

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

Sine et al (2013) Biochem J 454(2)
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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 alpha7 neuronal nicotinic acetylcholine receptor using synthetic peptides.

Marinou et al (12614199) Biochem J 372
PubMedID 12614199