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## DATASHEET

$\alpha$ -Bungarotoxin

### Product overview

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

### Biological Data

<b>Biological description</b>	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 ( $\alpha$ 3 $\beta$ 2 or $\alpha$ 1 $\beta$ 1 subunits) and neuronal subtypes ( $\alpha$ 7, $\alpha$ 8, $\alpha$ 9 subunits, (IC <sub>50</sub> values are 1.6 nM and > 3 $\mu$ 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

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

### Chemical Data

<b>Chemical name</b>	IVCHTTATSPISAVTCPPGENLCYRKMWCDAFCSSRGKVVELGCAATCPSKPPYEEVTCSTDKCN PHPKQRPG
<b>Molecular Weight</b>	7984
<b>Molecular Formula</b>	C <sub>338</sub> H <sub>529</sub> N <sub>97</sub> O <sub>105</sub> S <sub>11</sub>
<b>CAS Number</b>	11032-79-4
<b>PubChem identifier</b>	90488742
<b>SMILES</b>	[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](C)SSC[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](CCNC(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)N3C(C)C(C)C(=O)N[C@@H](C)C(=O)N[C@@H](C)C(=O)N[C@@H](C)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](CCNC(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)O)[C@@H](C)O)[C@@H](C)O

Source  
InChIKey

Bungarus multicinctus  
NTCJKZSYQZRQE-CSMGIAWSA-N

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## References

### Snake neurotoxin $\alpha$ -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 $\alpha$ -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 alpha7 neuronal nicotinic acetylcholine receptor using synthetic peptides.

Marinou et al (12614199) Biochem J 372

**PubMedID** [12614199](#)

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