IN FOCUS

Labeled α-Bungarotoxin

α-Bungarotoxin is a 74 amino acid peptidyl toxin isolated from the venom of the banded krait snake, *Bungarus multicinctus*[1].

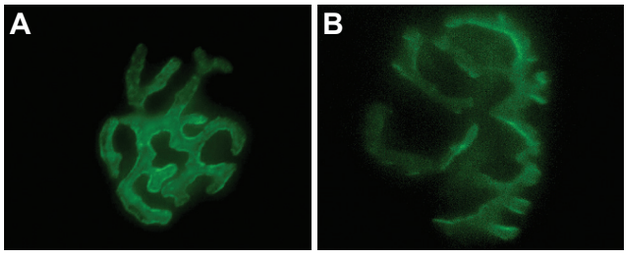
α-Bungarotoxin blocks postsynaptic neuromuscular transmission via competitive inhibition of nicotinic ACh receptors (nAChRs) with an IC_{50} of 3.5 x 10 $^{-10}$ M, thereby prevents the depolarizing action on postsynaptic membranes and blocks neuromuscular transmission[2].

The toxin is selective for nAChR α7 receptors (IC_{50} value of 1.6 nM) and nAChR α3/β4 receptors (IC_{50} value of > 3 μM)[3,4]. α-Bungarotoxin also binds to and blocks a subset of $GABA_A$ receptors ($GABA_A$Rs) that contain the $GABA_A$R β3 subunit. In particular, α-Bungarotoxin blocks $GABA_A$Rs that contain interfaces between adjacent β3 subunits[5].

Labeled α-Bungarotoxin is ideally used to label nAChR α7 receptors, and in many cases to localize neuromuscular junctions[6,7].

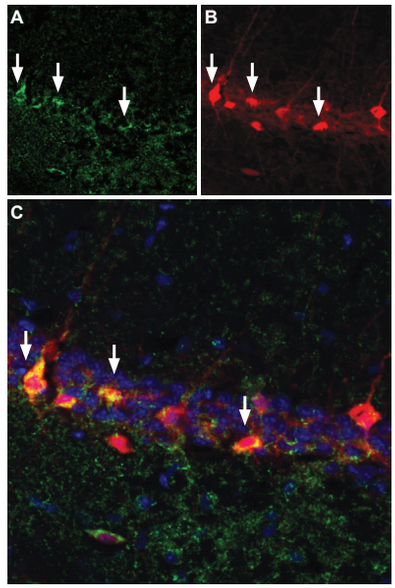
Alomone Labs is pleased to offer **α-Bungarotoxin-ATTO-488** (#B-100-AG), labeled with a green fluorescent dye and **α-Bungarotoxin-Biotin** (#B-100-B), labeled with biotin.

Alomone Labs α-Bungarotoxin-ATTO-488 in whole mount staining of mice Gastrocnemius muscle



Whole mount staining of mice Gastrocnemius muscle was stained with the neuromuscular junction marker **α-Bungarotoxin-ATTO-488** (#B-100-AG), (green) at 1:50 (A) and 1:100 (B) ratios.
The images were taken using Nikon Epifluorescence microscopy at X100 magnification and are a kind gift from Dr. Eran Perlsson, Dept. of Physiology and Pharmacology, Tel-Aviv University.

Bungarotoxin-Biotin binding sites co-localize GABAergic neurons expressing parvalbumin in mouse hippocampal CA1 region



A. Free floating mouse brain sections were incubated with **α-Bungarotoxin-Biotin** (#B-100-B), (1:10,000) followed by streptavidin-Alexa 488 (green). B. Same sections were stained with anti-parvalbumin, followed by goat anti-mouse labeled with Texas red isothiocyanate (TRITC). C. Merge of A and B demonstrates sites of colocalization (vertical arrows) confirming reports that a subset of hippocampal interneurons express nAChR α7. DAPI is used as the counterstain.

References

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4. Garcia-Guzman, M. *et al.* (1995) *Eur. J. Neurosci.* **7,** 647.
5. McCann, C.M. *et al.* (2006) *Proc. Natl. Acad. Sci. U.S.A.* **103,** 5149.
6. Fertuck, H.C. and Salpeter, M.M. (1974) *Proc. Natl. Acad. Sci. U.S.A.* **71,** 1376.
7. Ravdin, P. and Axelrod, D. (1977) *Anal. Biochem.* **80,** 585.

Related Products

Compound	Cat. #
α-Bungarotoxin	B-100
α-Bungarotoxin-ATTO-488	B-100-AG
α-Bungarotoxin-Biotin	B-100-B
Anti-Nicotinic Acetylcholine Receptor α7 (extracellular)	ANC-007