

## Botulinum neurotoxin type A Recombinant Protein | botA recombinant protein

Recombinant Clostridium botulinum Botulinum neurotoxin type A

|                              |                                                                 |
|------------------------------|-----------------------------------------------------------------|
| CATALOG #<br><b>AAA18591</b> | HOST<br><b>E Coli or Yeast or Baculovirus or Mammalian Cell</b> |
|------------------------------|-----------------------------------------------------------------|

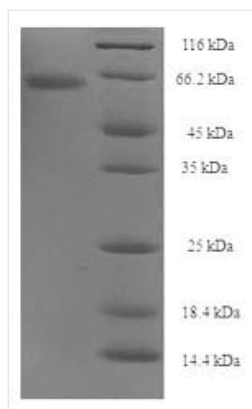
### PRODUCT SYNONYMS

Botulinum neurotoxin type A; Recombinant Clostridium botulinum Botulinum neurotoxin type A; Bontoxilysin-A; BOTOX; botA recombinant protein

### PRODUCT SPECIFICATIONS

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Host                    | E Coli or Yeast or Baculovirus or Mammalian Cell                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Purity/Purification     | Greater or equal to 85% purity as determined by SDS-PAGE.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Form/Format             | Lyophilized or liquid (Format to be determined during the manufacturing process)                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Sequence Positions      | 1-436aa; partial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Sequence                | MPFV NKQFNY KDPVNGVDIA YIKIPNVGQM QPVKAFKIHN KIWVIPERDT FTNPEEGDLN PPPEAKQVPV<br>SYDSTYLST DNEKDNLYKG VTKLFEIYIS TDLGRMLLS IVRGIPFWGG STIDTELKVI DTNCINVIQP<br>DGSYRSEELN LVIIGPSADI IQFECKSFGH EVLNLTRNGY GSTQYIRFSP DFTFGFEESL EVDTNPLLGA<br>GKFATDPAVT LAHELIHAGH RLYGAIINPN RVFKVNTNAY YEMSGLEVSF EELRTFGGHD AKFIDSLQEN<br>EFRLYYNKF KDIASLTNKA KSIVGTTASL QYMKNVFKEK YLLSEDTSGK FSVDKLKFDK LYKMLTEIYT<br>EDNFVKFFKV LNRKTYLNFD KAVFKINIVP KVNYYTIYDGF NLRNTNLAAN FNGQNTINN MNFTKLKNFT<br>GLFEFYKLLC VRGIIT |
| Preparation and Storage | Store at -20 degree C, for extended storage, conserve at -20 degree C or -80 degree C.                                                                                                                                                                                                                                                                                                                                                                                                                          |

### IMAGES



SDS-PAGE

### ADDITIONAL INFORMATION

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Related Product Information for botA recombinant protein | Inhibits acetylcholine release. The botulinum toxin binds with high affinity to peripheral neuronal presynaptic membrane to the secretory vesicle protein SV2. It binds directly to the largest luminal loop of SV2A, SV2B and SV2C. It is then internalized by receptor-mediated endocytosis. The C-terminus of the heavy chain (H) is responsible for the adherence of the toxin to the cell surface while the N-terminus mediates transport of the light chain from the endocytic vesicle to the cytosol. After translocation, the light chain (L) hydrolyzes the 197-Gln-Arg-198 bond in SNAP-25, thereby blocking neurotransmitter release. Inhibition of acetylcholine release results in flaccid paralysis, with frequent heart or respiratory failure. |
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### References

The complete amino acid sequence of the Clostridium botulinum type A neurotoxin, deduced by nucleotide sequence analysis of the encoding gene. Thompson D.E., Brehm J.K., Oultram J.D., Swinfield T.-J., Shone C.C., Atkinson T., Melling J., Minton N.P. Eur. J. Biochem. 189:73-81(1990) The complete sequence of botulinum neurotoxin type A and comparison with other clostridial neurotoxins. Binz T., Kurazono H., Wille M., Frevert J., Wernars K., Niemann H.J. Biol. Chem. 265:9153-9158(1990) Organization and phylogenetic interrelationships of genes encoding components of the botulinum toxin complex in proteolytic Clostridium botulinum types A, B, and F evidence of chimeric sequences in the gene encoding the nontoxic nonhemagglutinin component. East A.K., Bhandari M., Stacey J.M., Campbell K.D., Collins M.D. Int. J. Syst. Bacteriol. 46:1105-1112(1996) Molecular characterization of two forms of nontoxic-nonhemagglutinin components of Clostridium botulinum type A progenitor toxins. Fujita R., Fujinaga Y., Inoue K., Nakajima H., Kumon H., Oguma K. FEBS Lett. 376:41-44(1995) Partial amino acid sequence of the heavy and light chains of botulinum neurotoxin type A. Schmidt J.J., Sartymoorthy V., Dasgupta B.R. Biochem. Biophys. Res. Commun. 119:900-904(1984) Partial sequence of the light chain of botulinum neurotoxin type A. Dasgupta B.R., Foley J., Niece R. Biochemistry 26:4162-4162(1987) Botulinum neurotoxin type A sequence of amino acids at the N-terminus and around the nicking site. Dasgupta B.R., Dekleva M.L. Biochimie 72:661-664(1990) Botulinum neurotoxin type A cleavage of the heavy chain into two halves and their partial sequences. Sathymoorthy V., Dasgupta B.R., Foley J., Niece R.L. Arch. Biochem. Biophys. 266:142-151(1988) Inactivation of Clostridium botulinum type A neurotoxin by trypsin and purification of two tryptic fragments. Proteolytic action near the COOH-terminus of the heavy subunit destroys toxin-binding activity. Shone C.C., Hambleton P., Melling J. Eur. J. Biochem. 151:75-82(1985) Botulinum neurotoxins serotypes A and E cleave SNAP-25 at distinct COOH-terminal peptide bonds. Schiavo G., Santtuci A., Dasgupta B.R., Mehta P.P., Jontes J., Benfenati F., Wilson M.C., Montecucco C. FEBS Lett. 335:99-103(1993) Site-directed mutagenesis identifies active-site residues of the light chain of botulinum neurotoxin type a. Rigoni M., Caccin P., Johnson E.A., Montecucco C., Rossetto O. Biochem. Biophys. Res. Commun. 288:1231-1237(2001) SV2 is the protein receptor for botulinum neurotoxin A. Dong M., Yeh F., Tepp W.H., Dean C., Johnson E.A., Janz R., Chapman E.R. Science 312:592-596(2006) Crystal structure of botulinum neurotoxin type A and implications for toxicity. Lacy D.B., Tepp W., Cohen A.C., Dasgupta B.R., Stevens R.C. Nat. Struct. Biol. 5:898-902(1998)

### NCBI AND UNIPROT INFORMATION

|                            |                             |
|----------------------------|-----------------------------|
| NCBI GI #                  | 489451277                   |
| NCBI Accession #           | WP_003356619.1              |
| NCBI GenBank Nucleotide #  | WP_003356619.1              |
| UniProt Accession #        | P10845; P01561; P18639      |
| Molecular Weight           | 52 kDa                      |
| NCBI Official Full Name    | peptidase M27               |
| UniProt Protein Name       | Botulinum neurotoxin type A |
| UniProt Gene Name          | botA                        |
| UniProt Synonym Gene Names | atx; bna; BoNT/A; BOTOX     |
| UniProt Entry Name         | BXA1_CLOBO                  |

**For Research Use Only.** Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://www.aaabiotech.com/bota-recombinant-protein-e-coli/18591>