

October 26, 2022 (revised)

STATEMENT ON A NONPROPRIETARY NAME ADOPTED BY THE USAN COUNCIL

USAN (LM-38)

NIVOBOTULINUMTOXINA

PRONUNCIATION

nye" voe bot" ue lye' num tox" in ay"

THERAPEUTIC CLAIM

Treatment of glabellar lines and lateral canthal lines

CHEMICAL NAME

Protein NTNH (nontoxic-nonhemagglutinin) (*Clostridium botulinum* type A Hall strain), compound with botulin A (*Clostridium botulinum* type A Hall strain light chain) (429→453')-disulfide with botulin A (*Clostridium botulinum* type A Hall strain heavy chain, intra-chain disulfide bond with 1234-1279), compound with hemagglutinin HA3b (*Clostridium botulinum* type A Hall strain), compound with hemagglutinin HA1 (*Clostridium botulinum* type A Hall strain), compound with hemagglutinin HA3a (*Clostridium botulinum* type A Hall strain), compound with hemagglutinin HA2 (*Clostridium botulinum* type A Hall strain) (Source: SciFinder; ACI)

Sequence

Disulfide bridges

429C-453C 1234C-1279C

Neurotoxin Light chain

1	PFVNKQFNYK	DPVNGVDIAY	IKIPNAGQMQ	PVKAFKIHNK	IWVIPERDTF
51	TNPEEGDLNP	PPEAKQVPVS	YYDSTYLSTD	NEKDNYLKGV	TKLFERIYST
101	DLGRMLLTSI	VRGIPFWGGS	TIDTELKVID	TNCINVIQPD	GSYRSEELNL
151	VIIGPSADII	QFECKSFGHE	VLNLTRNGYG	STQYIRFSPD	FTFGFEESLE
201	VDTNPLLGAG	KFATDPAVTL	AHELIHAGHR	LYGIAINPNR	VFKVNTNAYY
251	EMSGLEVSFE	ELRTFGGHDA	KFIDSLQENE	FRLYYYNKFK	DIASLTNKKK
301	SIVGTTASLQ	YMKNVFKEKY	LLEDTSQKGF	SVDKLKFDFL	YKMLTEIYTE
351	DNFVKFFKVL	NRKTYLNFDF	AVFKINIVPK	VNYTIYDGFN	LRNTNLAANF
401	NGQNTTEINM	NFTKLKNFTG	LFEFYKLLCV	RGIITSK	

Neurotoxin Heavy chain

448	ALNDLCIKVN	NWDLFFSPSE	DNFTNDLNKG	EEITSDTNIE	AAEENISLDL
498	IQQYYLTFNF	DNEPENISIE	NLSSDIIGQL	ELMPNIERFP	NGKYEYLDKY
548	TMFHYLRAQE	FEHGKSRIAL	TNSVNEALLN	PSRVYTFSS	DYVKKVNKAT
598	EAAMFLGWVE	QLVYDFTDET	SEVSTTDKIA	DITIIIPYIG	PALNIGNMLY
648	KDDFVGALIF	SGAVILLEFI	PEIAIPVLGT	FALVSYIANK	VLTVQTIIDNA
698	LSKRNEKWDE	VYKYIVTNWL	AKVNTQIDLI	RKKMKEALEN	QAEATKAIIN
748	YQYNQYTEEE	KNNINFNIDD	LSSKLNESIN	KAMININKFL	NQCSVSYLMN
798	SMIPYGVKRL	EDFDASLKDA	LLKYIYDNRG	TLIGQVDRLK	DKVNNLTSTD
848	IPFQLSKYVD	NQRLLSTFTE	YIKNIINTSI	LNLRYESNHL	IDLSRYASKI
898	NIGSKVNFDP	IDKNQIQLFN	LESSKIEVIL	KNAIVYNSMY	ENFSTSFWIR
948	IPKYFNSISL	NNEYTIINCM	ENNSGWKVSL	NYGEIIWTLQ	DTQEIKQRVV
998	FKYSQMINIS	DYINRWIFVT	ITNNRLNNSK	IYINGRLIDQ	KPISNLGNIH
1048	ASNNIMFKLD	GCRDTHRYIW	IKYFNLFDFE	LNEKEIKDLY	DNQSNISGILK

1098	DFWGDYLYQYD	KPYYMLNLYD	PNKYVDVNNV	GIRGYMYLKG	PRGSVMTTNI
1148	YLNSSLYRGT	KFIKKYASG	NKDNIVRND	RVYINVVVK	KEYRLATNAS
1198	QAGVEKILSA	LEIPDVGNLS	QVVVMKSKND	QGITNKCKMN	LQDNNNGNDIG
1248	FIGFHQFNFI	AKLVASNWYN	RQIERSSRTL	GCSWEFIPVD	DGWERPL

HA1

1	VIQNSLNDKI	VTISCKADTN	LFFYQVAGNV	SLFQQTRNYL	ERWRLIYDSN
51	KAAYKIKSMD	IHNTNLVLTW	NAPTHNISTQ	QDSNADNQYW	LLLKDIGNNS
101	FIIASYKNPN	LVLYADTVAR	NLKLSTLNNS	NYIKFIIEDY	IISDLNNFTC
151	KISPILDNLK	VVQQVDVTNL	NVNLYTWDYG	RNQKWTIRYN	EEKAAAYQFFN
201	TILSNGVLTW	IFSNGNTRV	SSSNDQNNDA	QYWLINPVSD	TDETYTITNL
251	RDTTKALDLY	GGQTANGTAI	QVFNHYGDDN	QKWNIRNP	

HA2

1	SVERTFLPNG	NYNIKSIFSG	SLYLNVPVSKS	LTFSSNESSAN	NQKWNVEYMA
51	ENRCFKISNV	AEPNKYLSYD	NFGFISLDSL	SNRCYWFPIK	IAVNTYIMLS
101	LNKVNELDYA	WDIYDTNENI	LSQPLLLLPN	FDIYNSNQMF	KLEKI

HA3a

1	VINYSDTIDL	ADGNYVVRG	DGWILSRQNO	ILGGSVISNG	STGIVGDLRV
51	NDNAIPYYYP	TPSFNEEYIK	NNIQTVFTNF	TEANQIPIGF	EFKSTAPSNG
101	NLYMYLQYTY	IRYEIIKVLQ	HEIIERAVLY	VPSLGYVKSI	EFNPGEKINK
151	DFYFLTNDKC	ILNEQFLYKK	ILETTK		

HA3b

1	VSSTQRVLPHY	SNGLYVINKG	DGYIRTNDKD	LIGTLLIEAG	SSGSIQPRL
51	RNTRPLFTT	SNDTKFSQQY	TEERLKDAFN	VQLFNTSTSL	FKFVEEAPSD
101	KNICIKAYNT	YEKEYLIDYQ	NGSIVNKAAY	YLPSTLYCEV	TNAPSEPESEV
151	VKMQVAEDGF	IQNGPEEEIV	VGVIDPSENI	QEINTAISDN	YTYNIPGIVN
201	NNPFYILFTV	NTTGIYKINA	QNNLPSLKIY	EAIGSGNRNF	QSGNLCDDDI
251	KAINYITGFD	SPNAKSYLVV	LLNKDKNYI	RVPQTSSNIE	NQIQFKREEG
301	DLRNLNMSSV	NIIDNLNSTG	AHYTRQSPD	VHDYISYEFT	IPGNFNKDT
351	SNIRLYTSYN	QGIGTLFRVT	ETIDGYNLIN	IQQNLHLLNN	TNSIRLLNGA
401	IYILKVEVTE	LNNYNIRLHI	DITN		

NTNH

1	MNINDNLSIN	SPVDNKNVVV	VRARKTDTVF	KAFKVAPNIW	VAPERYYGES
51	LSIDEEYKVD	GGIYDSNFLS	QDSEKDKFLQ	AIITLLKRIN	STNAGEKLLS
101	LISTAIPFPY	GYIGGGYYAP	NMITFGSAPK	SNKKLNSLIS	STIPFPYAGY
151	RETNYLSSSED	NKSFYASNIV	IFGPGANIVE	NNTVFYKKEKED	AENGMGTMTTE
201	IWFQPFPTYK	YDEFYIDPAI	ELIKCLIKSL	YFLYGIKPSD	DLVIPYRLRS
251	ELENIEYSQL	NIVDLLVSGG	IDPKFINTDP	YWFTDNYFSN	AKKVFEDHRN
301	IYETEIEGNN	AIGNDIKRL	KQKFRININD	IWELNLNYFS	KEFSIMMPDR
351	FNNALKHFYR	KQYKIDYPE	NYSINGFVNG	QINAQLSLSD	RNQDIINKPE
401	EIINLLNGNN	VSLMRSNIYG	DGLKSTVDDF	YSNYKIPYNR	AYEYHFNNNSN
451	DSSLDNVNIG	VIDNIPEIID	VNPYKENCCK	FSPVQKITST	REINTNIPWP
501	INYLQAQNTN	NEKFSLSDDF	VEVVSCKDKS	LVYSFLSNVM	FYLDISKDNS
551	PIDTDKYYL	WLREIFRNY	FDITATQEIN	TNCGINKVVT	WFGKALNILN
601	TSDSFVEEFQ	NLGAISLINK	KENLSMPIIE	SYEIPNDMLG	LPLNDLNEKL
651	FNIYSKNTAY	FKKIYYNFLD	QWWTQYYSQY	FDLICMAKRS	VLAQETLIKR
701	IIQKKSYYLI	GNSNISSDNL	ALMNLTTTNT	LRDISNESQI	AMNNVDSFLN
751	NAAICVFESN	IYPKFISFME	QCINNINIKT	KEFIQKCTNI	NEDEKLQLIN
801	QNVFNSLDFE	FLNIQNMKSL	FSSETALLIK	EETWPYELVL	YAFKEPNNV
851	IGDASGKNTS	IEYSKDIGLV	YGINSDALYL	NGSNQISIFS	NDFFENGLTN

901	SFSIYFWLRN	LGKDTIKSKL	IGSKEDNCGW	EIYFQDTGLV	FNMIDSNGNE
951	KNIYLSDVSN	NSWHYITISV	DRLKEQLLIF	IDDNLVANES	IKEILNIYSS
1001	NIISLLENN	PSYIEGLTIL	NKPTTSQEVN	SNYFEVLNNS	YIRDSNEERL
1051	EYNKTYQLYN	YVFSDKPICE	VKQNNNIYLT	INNTNNLNLQ	ASKFKLLSIN
1101	PNKQYVQKLD	EVIISVLDNM	EKYIDISEDN	RLQLIDNKNN	AKKMIISNDI
1151	FISNCLTLYS	NGKYICLSMK	DENHNWMICN	NDMSKYLYLW	SFK

MOLECULAR WEIGHT

Subunit name	Theoretical molecular weight
Neurotoxin Light chain	50.0 kDa
Neurotoxin Heavy chain	98.2 kDa
HA1	33.2 kDa
HA2	16.9 kDa
HA3a	20.3 kDa
HA3b	48.0 kDa
NTNH	138.1 kDa

TRADEMARK

None as yet

SPONSOR

Medytox Inc.

CODE DESIGNATIONS

MT10109-DS

CAS REGISTRY NUMBER

1638949-86-6

UNII

RKC2ICC0TO

SCS