

May 26, 2016

STATEMENT ON A NONPROPRIETARY NAME ADOPTED BY THE USAN COUNCIL

USAN (DE-79) 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* A strain CBAM0804 Hall-A), compd. with botulin A (*Clostridium botulinum* A strain CBAM0804 Hall-A heavy chain) (6→430')-disulfide with botulin A (*Clostridium botulinum* A strain CBAM0804 Hall-A light chain), compd. with hemagglutinin HA3b (*Clostridium botulinum* A strain CBAM0804 Hall-A), compd. with hemagglutinin HA1 (*Clostridium botulinum* A strain CBAM0804 Hall-A), compd. with hemagglutinin HA3a (*Clostridium botulinum* A strain CBAM0804 Hall-A), compd. with hemagglutinin HA2 (*Clostridium botulinum* A strain CBAM0804 Hall-A)

STRUCTURAL FORMULA

bridge Cys-6 - Cys-430' disulfide bridge

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SEQ      1 ALNDLCIKVN  NWDLFFSPSE  DNFTNDLNKG  EEITSDTNIE  AAEENISLDL
      51 IQQYYLTFNF  DNEPENISIE  NLSSDIIGQL  ELMPNIERFP  NGKKYELDKY
     101 TMFHYLRAQE  FEHGKSRIAL  TNSVNEALLN  PSRVYTFSS   DYVKKVNKAT
     151 EAAMFLGWVE  QLVYDFTDET  SEVSTTDKIA  DITIIIPYIG  PALNIGNMLY
     201 KDDFVGALIF  SGAVILLEFI  PEIAIPVLGT  FALVSYIANK  VLTVQTIDNA
     251 LSKRNEKWDE  VYKYIVTNWL  AKVNTQIDLI  RKKMKEALEN  QAEATKAIIN
     301 YOYNQYTEEE  KNNINFNIDD  LSSKLNESIN  KAMININKFL  NQCSVSYLMN
     351 SMIPYGVKRL  EDFDASLKDA  LLKYIYDNRG  TLIGQVDRLK  DKVNNTLSTD

401 IPFQLSKYVD  NQRLLSTFTE  YIKNIINTSI  LNLRYESNHL  IDLSRYASKI
      451 NIGSKVNFDP  IDKNQIQLFN  LESSKIEVIL  KNAIVYNSMY  ENFSTSFWIR
      501 IPKYFNSISL  NNEYTIINCM  ENNSGKWVSL  NYGEIIWTLQ  DTQEIKQRVV
      551 FKYSQMINIS  DYINRWIFVT  ITNNRLNNSK  IYINGRLIDQ  KPISNLGNIH
      601 ASNNIMFKLD  GCRDTHRYIW  IKYFNLFDK  LNEKEIKDLY  DNQSNNGILK
      651 DFWGDYLQYD  KPYYMLNLYD  PNKYVDVNNV  GIRGYMYLKG  PRGSVMTTNI
      701 YLNSSLYRGT  KFIIKKYASG  NKDNIVRNND  RVYINVVVKN  KEYRLATNAS
      751 QAGVEKILSA  LEIPDVGNLS  QVVVMKSKND  QGITNKCKMN  LQDNNNGNDIG
      801 FIGFHQFNNI  AKLVASNWYN  RQIERSRRTL  GCSWEFIPVD  DGWGERPL

SEQ      1 MPFVNKQFNY  KDPVNGVDIA  YIKIPNAGQM  QPVKAFKIHN  KIWVIPERDT
      51 FTNPEEGDLN  PPPEAKQVPV  SYDSTYLST  DNEKDNYLKG  VTKLFERIYS
     101 TDLGRMLLTS  IVRGIPFWGG  STIDTELKVI  DTNCINVIQP  DGSYRSEELN
     151 LVIIGPSADI  IQFECKSFGH  EVLNLTRNGY  GSTQYIRFSP  DFTFGFEESL
     201 EVDTNPLLGA  GK FATDPAVT  LAHELIIHAG  RLYGIAINPN  RVFKVNTNAY

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251 YEMSGLEVSF EELRTFGGHD AKFIDSLQEN EFRLYYYNKF KDIASLTNKA
 301 KSIVGTTASL QYMKNVFKK YLLSEDTSGK FSVDKLKFDK LYKMLTEIYT
 351 EDNFVKFFKV LNRKTYLNFD KAVFKINIVP KVNYYTIYDGF NLRNTNLAAN
 401 FNGQNTTEINN MNFTKLNFT GLFEFYKLLC VRGIITSK

SEQ 1 MNINDNLSIN SPVDNKNVVV VRARKTDTVF KAFKVAPNIW VAPERYYGES
 51 LSIDEEEKVD GGIYDSNFLS QDSEKDKFLQ AIITLLKRIN STNAGEKLLS
 101 LISTAIPFPY GYIGGGYYAP NMITFGSAPK SNKKLNSLIS STIPFPYAGY
 151 RETNYLSSSED NKSFYASNIV IFGPGANIVE NNTVIFYKKED AENGMGTMTTE
 201 IWFQPFLTYK YDEFYIDPAI ELIKCLIKSL YFLYGIKPSD DLVIPYRLRS
 251 ELENIEYSQL NIVDLLVSGG IDPKFINTDP YWFTDNYFSN AKKVFEDHRN
 301 IYETEIEGNN AIGNDIKRLR KQKFRININD IWELNLNYFS KEFSIMMPDR
 351 FNNALKHFYR KQYYKIDYPE NYSINGFVNG QINAQLSLSD RNQDIINKPE
 401 EIINLLNGNN VSLMRSNIYG DGLKSTVDDF YSNYKIPYNR AYEHFNNSN
 451 DSSLDNVNIG VIDNIPEIID VNPYKENDCK FSPVQKITST REINTNIPWP
 501 INYLQAQNTN NEKFSLSSDF VEVVSSKDKS LVYSFLSNVM FYLDSIKDNS
 551 PIDTDKQYYL WLREIFRNYS FDITATQEIN TNCGINKVVT WFGKALNILN
 601 TSDSFVEEFQ NLGAISLINK KENLSMPIIE SYEIPNDMLG LPLNDLNEKL
 651 FNIYSKNTAY FKKIYYNFLD QWWTQYYSQY FDLICMAKRS VLAQETLIK
 701 IIQKKLSYLI GNSNISSDNL ALMNLTTTNT LRDISNESQI AMNNVDSFLN
 751 NAAICVFESN IYPKFISFME QCINNINIKT KEFIQKCTNI NEDEKLQLIN
 801 QNVFNSLDFE FLNIQNMKSL FSSETALLIK EETWPYELVL YAFKEPGNNV
 851 IGDASGKNTS IEYSKDIGLV YGINS DALYL NGSNQSISFS NDDFFENGLTN
 901 SFSIYFWLRN LGKDTIKSKL IGSKEDNCGW EIYFQDTGLV FNMIDSNGNE
 951 KNIYLSDVSN NSWHYITISV DRLKEQLLIF IDDNLVANES IKEILNIYSS
 1001 NIISLLSENN PSYIEGLTIL NKPTTSQEVN SNYFEVLNNS YIRDSNEERL
 1051 EYNKTYQLYN YVFSDKPICE VKQNNNIYLT INNTNNLNLQ ASKFKLLSIN
 1101 PNKQYVQKLD EVIISVLDNM EKYIDISEDN RLQLIDNKNN AKKMIISNDI
 1151 FISNCLTSLY NGKYICLSMK DENHNWMICN NDMSKYLWLW SFK

SEQ 1 VSSTQRVLPY SNGLYVINKG DGYIRTNDKD LIGTLLEIAG SSGSIIQPRL
 51 RNTTRPLFTT SNTDKFSQQY TEERLKDAFN VQLFNTSTSL FKFVEEAPSD
 101 KNICIKAYNT YEKEYELIDYQ NGSIVNKA EY YLPSLGYCEV TNAPSPSEV
 151 VKMQVAEDGF IQNGPEEEIV VGVIDPSENI QEINTAISDN YTYNIPGIVN
 201 NNPFIYILFTV NTTGIYKINA QNNLPSLKIY EAIGSGNRNF QSGNLCDDDI
 251 KAINYITGFD SPNAKSYLVV LLNKDKNYI RVPQTSSNIE NQIQFKREEG
 301 DLRLNMNSSV NIIDNLNSTG AHYYTRQSPD VHDYISYEFT IPGNFNKDT
 351 SNIRLYTSYN QGIGTLFRVT ETIDGYNLIN IQQNLHLLNN TNSIRLLNGA
 401 IYILKVEVTE LNNYNIRLHI DITN

SEQ 1 MEHYSVIQNS LNDKIVTISC KADTNLFFYQ VAGNVSLFQQ TRNYLERWRL
 51 IYDSNKAAYK IKSMDIHNTN LVLTWNAPTH NISTQQDSNA DNQYWLLKLD
 101 IGNNSFIIAS YKNPNLVLYA DTVARNLKLS TLNNSNYIKF IIEDYIISDL
 151 NNFTCKISPI LDLNKVVQVQV DVTNLNVNLY TWDYGRNQKW TIRYNEEKAA
 201 YQFFNTILSN GVLTWIFSNG NTVRVSSND QNNDAYWLI NPVSDTDETY
 251 TITNLRDTTK ALDLYGGQTA NGTAIQVFNY HGDDNQKWN I RNP

SEQ 1 MNSSIKKIYN DIQEKVINYS DTIDLADGNY VVRGDGWIL SRQNQILGGS
 51 VISNGSTGIV GDLRVNDNAI PYYYPTPSFN EEYIKNNIQT VFTNFTEANQ
 101 IPIGFEFASKT APSNKNLYMY LQYTYIRYEI IKVLQHEIIE RAVLYVPSLG
 151 YVKSIEFNPG EKINKDFYFL TNDKCILNEQ FLYKKILETT KNIPTNNIFN
 201 SK

SEQ 1 MSVERTFLPN GNYNIKSIFS GSLYLNVPVSK SLTFSNESSA NNQKWNVEYM
 51 AENRCFKISN VAEPNKYLSY DNFGFISLDS LSNRCYWFPI KIAVNTYIML
 101 SLNKVNELDY AWDIYDTNEN ILSQPLLLLP NFDIYNSNQMF FLEKI

MOLECULAR WEIGHT	900 kD
TRADEMARK	None as yet
SPONSOR	Allergan
CODE DESIGNATIONS	MT 10109
<u>CAS</u> REGISTRY NUMBER	1638949-86-6
UNII	RKC2ICC0TO
SCS	