

NaChBac (BAB05220.1)

1 10 20 30 40 50 60
 FT SKMOKIVNHRATFTVIALILFNALIVGIETYPRIYADHKW-LFYRIDLVLWIFTIEIAMRFLA
S1 **S2**
 LIHFSSKKIVSHRYFTRITITLILFNALLVGLETYPALR-HEYGSLFHVIDVILLWIFTLEILTRFLA
 FRKRVGKIVNHHKVQFFVVWLIAVNAMMMGISTSKSIKDNEERRDAFELVDKIFLIIFTIELGMQFIY
 IREKIGFVIETNQFEFILFLIVNSIMMGLQTFPFVHGNDNVNAYAFNRVDSIILIIIFTVELVLRFIH
 LR YRCGMIVNNKHVOTVIVIMISINAIMMGLATFDVFVKDDPVMSHRFEIVDKVFLSIFTVELGMQFIY
 GRNLCGRIVNNNQVQLVILLISINAIMMGI GTFDVLDPAIEAAFEKTDEVFLIFTVELVMQFIY
 ARLWCGKFVNNDRVQLTMVVLIAVNAIMMGI GTFDVTEPVEERFELVDKIFLIIFTVELALQFLY
 FRVMVGKAVNNEHVQVVVWLVIVNAIMMVGTFDFVTDVPTTEAVFEKIDLAFLILFTIELVMQFIY
 MRLTCGKIVNDERSQTFIVILIIINSIMMGI GTFDGITGNEALDGAFOQTDKAFLIVFTIELVMQFIY
 FRYLSGTGVNSEKVQLFIVSLIAINALMMGI ATFDVFVREDPSVNNAFEIVDQIFLIFTIELAMQFAY
 ARLLCGKVVEAPAVQLTIVTLIVINAILMGVA TFDVTDPRPHINRAFETTDRLVFLIFTIELSLQFIY
 TRQFAGKLVNNDRVQFLTIVLIIINSIMMVGATFDFA TDNDKVRNAFEATDKAFLIVFTIELGLOAMY
 LRLICGEIVNDHNVQLOGIVLVIVNAIMMVGATFDVFSENPKVDNVFEKTDLAFLIFTIELGMQLIY
 FRQKVGELVNDSKVQAVIVALIAINAIMMGIATFDLVDNDKELSEIFETVDTVFLCIFTVELALQFY
 ARKAVGRVVNNDRVQNILLLIVIVNAIMMVGATFPFVKYNPDL SARFELVDLIFLILFTVESGLQMY
 FRQICGDIVNHPRVQIFIIGLIINAIMMVGATFDVTEPVA DSAFEKTDLVFLCIFTVELVMQLIY
 ARKAIGKAVNDYRVQNIVLLIIINAIMMGIATFPLVKDDPELSNKFEVIDQVFLILFTIESSMQILF

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70 80 90 100 110 120 130
 SN-PKSAFFRSSWNWFDFLIVAAGHIFAGAQFVTVLRI RVL RVLRAISVVP SLRRLVDALVMTIPAL
S3 **S4**
 TT-PKKDFFKG GWNFDTIIVLSSHIFVGGHFITVLRILRVL RVLRAISVIPS RLVDALMLTIPAL
 HG-WR- ILIDGWLLFDTIIIVISWAFAEVQ-IIRAFRIFRALRLVTRIKVMKNLILALFSVIPRM
 LGLWR- FVKDAWUMFDFFLVAWSWSIEDN- GLKALRAFRILRLMHKEKSRIIKAIVAVLPKL
 RG-FS- LFLDGWLVFDFVIIILVWSWSFSSVQ-IIRAFRIFRALRLVTRIKVMKNLVLAVFGVMPRM
 HG-LR- LLLDGWLVFDLIIITVSWAFAEQ-IIRAFRIFRALRLVTRIKVMKNLILALFGVMPRM
 HG-HR- LFLDGWLVFDFVVVMSWSFSQVQ-IIRAFRIFRALRLVTRVAVMRNLT ALFSVIPRM
 HG-LR- LFLDGWLVFDFAIIVLWSWAFAQQ-IIRAFRIFRALRLITRVEVMRNLVVALFSVMPRM
 HG-LS- LFLDGWLVFDFVIIILWSWSLSGLO-IIRAFRIFRALRLITRVKVLRD LVT ALMDVMPRM
 RG-WT- LLLDGWLDFDLVIIILWSWSFEQVO-IIRAFRIFRALRLITRVE TLRN LVL ALFKVLPNL
 HG-WR- LLLDGWLCFDLIVIAMSWSFSQVQ-IIRAFRIFRALRLITRICKVMKNLVLALFGVMPRM
 RS-LG- LFM DGWLVFDFVIVITSWSLESLO-IIRAFRIFRALRLITRVEVMRNLVVALFSVMPRM
 HG-PH- LVKDAWLLFDLVIVVTSWSLEGFO-VVRAFRIFRTLRLITRVLRN LILAI FQVAPSM
 HG-WT- FYKDGWLVFDFIIIVVLSWSFASLO-IIRAFRIFRALRIITRIETMRN LVAALFDIMPRL
 HG-FH- LFLDGWLIFDFVIIILWSWMFSSVQ-IIRAFRIFRALRLVTRIKVMKNLVAALFEVMPRM
 HG-WR- LF KDGFLVFDLAIVVMSWALDGAQ- VARAFRIFRALRLITRIDTMRN LVLALFSVVPKM
 HG-FA- LFLDGWLFFDFVIVVLSWSFAGLO-IIRAFRIFRALRIITRIETMRN LVAALFNIMPRL
 HG-WT- LF KDGFLTF DLLIVVMSWALEGTQ-VIRAFRIFRALRLVTRISTMRN LVLALFSVIPKM

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140 150 160 170 180 190 200
 GN ILILMSIFFYIFAVI GTMLEQHV-SPEYFGNLQLSLLTLFQVVTLESWASGVMRPIFAEVP
S5 **P1** **P2**
 GN ILILMSIFFYIFAVI GTMLEQHV-APEYFANLQLSMLTLFQIVTLD SWGS GVMRPILVDIP
 LAIGVLLFLVS YIFAVMFTQLFKDLYEEGYTDEDYFGQIDKTF TLFQIMTLD AWA-AVARQVMDAYP
 SAIALLILVFYIFAVMFTALFKEL-PLSEN YFTRL DNS SFTL FQMMTME-WI-TITREC M QFYT
 ASVAALLLIMFIFAIYFTQTYKTLYADGLTEVDYFSNLDMTFL TL YQLM TFD GW-EVVRDVMQTQP
 LAITLLLILIFYIFAVLFTVLFKDLYKKGVTDQDYFSRL DATFFF TL FQIMTLD AWA-DIARQVIDEIK
 AAIGLMLALIFYIFGV MFTQLFKDI-QGTSYNYFGSLGWTF TL FQMMTLD DWA-SICREVI EVYK
 AAICLLLVLIMYIFAVMFTQLFKYMF RDGLTEYDYFSNLGA TFF TL FQIMTLD AWA-DVARDVMATYT
 AAIGL LLLIFYIFAVMFTQLFKDMWEQE QTEYDYFSRL DSTFFF TL FQVN TLD AWA-DVARDVMAVYP
 AAISM LLLLFYIFAVMFTVLFGDLYKDGH TDTD YF GGLGRSLFTLLVMMTMD-WT-GATREIAAVYP
 AAICCLLTLIFYIFAVMFTTLEKDN-EAPYFKRLDASLFTL FQLM TLD-YV-DVVRP IVHEY
 FAIGL LFLVSYIFAVMFTQLFKDLGERGLTDADYFGRI DDTFFF TL FQIMTLD GWA-DIARQVMEVY
 YAIGT LLLIFYVYAVLFTELFRDL-ELSEN YF GSLDVALFSCM QFTL E-WA-DTARECMEQRS
 GAI TALLVLILYVYAVLCTEFFRDAF VDG ITSEDYFSRL DSSLFTL FSMM TLE-WA-DIVRELMEYY
 GAI TALLLILIFYIFAVLFTQLF GDL-ELSAPFFSRL DY SLLTLF VMM TME-WA-DVARECMDQIW
 AAISL LMMIIFYIFAVMFTQLFRTMYANGETDVDYFSRL DSTL FTL FQIMTLD AWA-DIARDVMDTHK
 TAIGMLLFLIFYIFGV MFTQLYKDM SKQGLDEGNYFSSL PNTIFTL FQTM TM D EWA-GIYNQVAEVYS
 GAI TALLLILIFYIFGV LFTQLF GEL-EL SGD YFTR LDY SLLTLF VMM TME-WA-DVARECMAEIW
 TAIFMLLLIFYIFAVMFTQLFKDLYRDGLVPEPYFSGLAYSLFTL FQMM TLD EWA-NIQYEIAETYS

NaChBac (BAB05220.1)

210 220 230 240 250 260 270
 WSWLYFVVSFVLI GTFIFNLFIGVIVNNVNEKAELTD-NEEDGEAD
S6

NsvBa (AFV25941.1)
A. coffeaeformis, CCMP127 (#8654)
Attheya sp., CCMP212 (JK727018.1)
C. neogracile, CCMP1317 (#1738)
C. tenuis, ECT3854 (#19357)
Nitzschia sp., RCC80 (#24521)
O. aurita (#27960)
O. sinensis (#4108)
O. sinensis (#4642)
O. sinensis (#948)
P. tricornutum (XM_002186019.1)
P. tricornutum (XM_002186252.1)
P. tricornutum (XP_002186317.1)
S. costatum, Strain 1716 (#9006)
S. unipunctata, CCMP2910 (#7034)
T. pseudonana (XM_002287783.1)
T. pseudonana (XM_002287257.1)
T. weissflogii, CCMP1010 (#6343)

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280 290 300 310 320 330 336
 G-----LKQEISALRKDVAE LKSLLKQSK

E EA-----AQKQMDSLHEELKEIKQYLKSIEKQNRSS
 SEQP PYVKGN-----VQEQLDSLQVDELSRMOEETLIA LETLAQQLQL
 MENEVSV-----TEKRVDDLSRN LQQLIKNQKEMNASLGALARDIYA
 EEEEMCQ-----EKKT FQEIERQAKDLKTQIKVIKHXMDT KKSHGTE
 SDET PVID-----IHEQLESLEDQVDELTRI QEQT LHTLEYLT RHLQS
 TESID-----VREQ LDTLEDQ MEXLTRI QARTXHTLQYLT RQIQM
 EEEIECNDEDPS---S AEEE-----QKLOI EALENQ LVE LT K VQ QDT MKTIEVLTQH LKR
 DDEPD-----SEEQ IKA LET QI EELTRI QESTMMTLEYLTQQLQM
 NEED PVFEEA-----DGERLDSLNVR I EKLLRN QREM QGVVQ QL VKS LKD
 EDNETYD-----VPT QLKD LRGEVLM LMQ QKES QAA MDSI AKELYR
 E SVRPAVRED-----VRA QL DV LED HVEE LTRM QEET L L TLE ALT RQ LQT
 ET DLMK LH-----AQERLQELSETVDDMRT RHEK L QRT ILL LGTTLQS
 LK TSQQE-----TQERI RS IQS RM QD LTTA QY QTL TAVNT ALL HL
 AGT QGR TQD QLE---ETV VGS-----DE ALV DD LA QRS FV L DS QREMLA T E L L T R D T
 D EN QTGG RGT DP-----VQR RL F LEA QV KEL T QI QD Q T L A A L E G L T Y Q V
 S NDQ FEMN S SPL---ATV M ETP ST SDS R E L R L RE LQ Q N L D E M I S I Q N Q M T D M I V L T K K V
 SE VVIEKETD-----EKD IV DN LA E R V TY V L A S Q R E L L A T L E I L A K D S
 EN NL P T L L E S N S FHD NS H I S G L T R K R P T E Q R L E E L Q N K L D E M V Q V Q D Q M R K T I E A L T V M L