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                                   20                                  40                                  60
A.fumigatus Kin3  MAPG-----G GGNIKVVVRV RPFNSREIDR GAKCIVQMKG -NQTILVPPP GADEKSRKAG 54
A.oryzae Kin3     MAPG-----G GGNIKVVVRV RPFNSRENDR GAQCIVQMKE -NQTVLIPPP GAVDKLRKAG 54
A.nidulans UncA   MAPG-----G GGNIKVVVRV RPFNSREIER GAKCIVQMKD -SQTILTPPP GAEEKSRK-G 53
N.crassa Nkin2    MAPGMAPMGG GGNIKVVVRC RPFNAREHDR GAQCIVEMRD -NQTVLTTPP DAVVK----- 54
U.maydis Kin3     MADS------ -GNIKVVVRC RPMNSRERNR GASNLIEFVD QHQLILSPPN EADTKE---- 49
C.elegans Unc104  MS-------- --SVKVAVRV RPFNQREISN TSKCVLQVNG NTTTIN---- ---------- 36
M.musculus KIF1A  MA-------- GASVKVAVRV RPFNSREMSR DSKCIIQMSG STTTIV---- ---------- 38
Conservation

                                   80                                 100                                 120
A.fumigatus Kin3  G-KGAVEGPK TFAFDRSYWS FDK-NAPNYA GQDNLFADLG VPLLDNAFQG YNNCIFAYGQ 112
A.oryzae Kin3     GGKGAVEGPK TFAFDRSYWS FDK-NAPNYA GQDNLFDDLG VPLLDNAFQG YNNCIFAYGQ 113
A.nidulans UncA   GNKAAAEGPK TFAFDRSYWS FDK-KAPNYA GQDNLFSDLG VPLLDNAFQG YNNCIFAYGQ 112
N.crassa Nkin2    GGKD--QGQK IFAFDRSYWS FDK-NAPNYA GQDQLHEDLG KPLLDNAFQG YNNCIFAYGQ 111
U.maydis Kin3     NSKATKKKSM PFSFDRAY-- ------DEHT EQDDLFQYIG VELLQHAFNG FNTCVFAYGQ 101
C.elegans Unc104  GHSINKEN-F SFNFDHSYWS FAR-NDPHFI TQKQVYEELG VEMLEHAFEG YNVCIFAYGQ 94
M.musculus KIF1A  NPKQPKETPK SFSFDYSYWS HTSPEDINYA SQKQVYRDIG EEMLQHAFEG YNVCIFAYGQ 98
Conservation

                                  140                                 160                                 180
A.fumigatus Kin3  TGSGKSYSMM GYGKE---YG VIPRICQEMF QRIA-KMQED KNLNCTVEVS YLEIYNERVR 168
A.oryzae Kin3     TGSGKSYSMM GYGKE---YG VIPRICQSMF ERIT-EIQQD KNLGCTVEVS YLEIYNERVR 169
A.nidulans UncA   TGSGKSYSMM GYGKE---YG VIPRICQDMF ERIR-KIQED KNLTCTVEVS YLEIYNERVR 168
N.crassa Nkin2    TGSGKSYSMM GYGKD---AG IIPMICQDMF KRIN-DMQQD KNLRCTVEVS YLEIYNERVR 167
U.maydis Kin3     TGSGKSHSMV GYAQA---KG IIPLTGARLF EDINQKTAAD PNLKISVEVS YIEIYNEKVR 158
C.elegans Unc104  TGSGKSYTMM GKANDPDEMG IIPRLCNDLF ARIDNN--ND KDVQYSVEVS YMEIYCERVK 152
M.musculus KIF1A  TGAGKSYTMM GK-QEKDQQG IIPQLCEDLF SRINDT--TN DNMSYSVEVS YMEIYCERVR 155
Conservation

                                  200                                 220                                 240
A.fumigatus Kin3  DLLNPSNKGN LKVREHPSTG PYVEDLAKLA VRSFEEIDHL MDEGNKARTV AATNMNETSS 228
A.oryzae Kin3     DLLNPSNKGN LKVREHPSTG PYVEDLAKLA VRSFEEIENL MDEGNKARTV AATNMNETSS 229
A.nidulans UncA   DLLNPSNKGN LKVREHPSTG PYVEDLAKLA VRSFEEIENL MDEGNKARTV AATNMNETSS 228
N.crassa Nkin2    DLLNPANKGN LKVREHPSTG PYVEDLAKLV VGSFQEIEHL MDEGNKARTV AATNMNETSS 227
U.maydis Kin3     DLLNPKNKGN LKVREHPSLG PYVEDLSKLV VASYPDIMNL MDEGNKARTV AATNMNETSS 218
C.elegans Unc104  DLLNPNSGGN LRVREHPLLG PYVDDLTKMA VCSYHDICNL MDEGNKARTV AATNMNSTSS 212
M.musculus KIF1A  DLLNPKNKGN LRVREHPLLG PYVEDLSKLA VTSYNDIQDL MDSGNKARTV AATNMNETSS 215
Conservation

                                  260                                 280                                 300
A.fumigatus Kin3  RSHAVFTLTL TQKRHDAETS MDTEKVSRIS LVDLAGSERA NSTGATGARL KEGAEINRSL 288
A.oryzae Kin3     RSHAVFTLTL TQKRHDAETS MDTEKVSRIS LVDLAGSERA TSTGATGARL KEGAEINRSL 289
A.nidulans UncA   RSHAVFTLML TQKRHDAETS MDTEKVSRIS LVDLAGSERA NSTGATGARL KEGAEINRSL 288
N.crassa Nkin2    RSHAVFTLML TQKRFDPETK MEMEKAAKIS LVDLAGSERA TSTGATGARL KEGAEINRSL 287
U.maydis Kin3     RSHAVFTLVL TQKRFDVQTK LEAEKVSRIS MVDLAGSERA NSTGATGARL KEGANINRSL 278
C.elegans Unc104  RSHAVFTIVL TQKRHCADSN LDTEKHSKIS LVDLAGSERA NSTGAEGQRL KEGANINKSL 272
M.musculus KIF1A  RSHAVFNIIF TQKRHDAETN ITTEKVSKIS LVDLAGSERA DSTGAKGTRL KEGANINKSL 275
Conservation

                                  320                                 340                                 360
A.fumigatus Kin3  STLGRVIAAL ADVASG---- ----KKKNAS ---MVPYRDS ILTWLLKDSL GGNSMTAMIA 337
A.oryzae Kin3     STLGRVIAAL ADVASG---- ----KKKNAS ---MVPYRDS VLTWLLKDSL GGNSMTAMIA 338
A.nidulans UncA   STLGRVIAAL ADAASG---- ----KKKG-K ---QVPYRDS VLTWLLKDSL GGNSMTAMIA 336
N.crassa Nkin2    STLGRVIAAL ADLSTG---- ----KKKKGS AAGQVPYRDS VLTWLLKDSL GGNSMTAMIA 339
U.maydis Kin3     TTLGKVIAAL AIASSAVEPV KGAKKPKTAS LDSFVPYRDS VLTWLLKDSL GGNSKTAMIA 338
C.elegans Unc104  TTLGLVISKL AEEST----- -----KKKKS NKGVIPYRDS VLTWLLRENL GGNSKTAMLA 322
M.musculus KIF1A  TTLGKVISAL AEMDSG---- --PNKNKKKK KTDFIPYRDS VLTWLLRENL GGNSRTAMVA 329
Conservation

                                  380                                 400                                 420
A.fumigatus Kin3  AISPADINFD ETLSTLRYAD SAKRIKNHAV VNEDPNARMI RELKEELAQL RAKLGGGSTA 397
A.oryzae Kin3     AISPADINFE ETLSTLRYAD SAKRIKNHAV VNEDPNARMI RELKEELAQL RAKLGGGVAP 398
A.nidulans UncA   AISPADINFD ETLSTLRYAD SAKRIKNHAV VNEDPNARMI RELKDELAQL RAKLGGGAAG 396
N.crassa Nkin2    AISPADINYD ETLSTLRYAD SAKRIKNHAV VNEDANARMI RELKEELAQL RSKLGNGGVV 399
U.maydis Kin3     AISPAD--YE ETLSTLRYAD QAKKIKNKAV VNEDPNAKLI RELKEELELL RTRVSGG--- 393
C.elegans Unc104  ALSPADINFD ETLSTLRYAD RAKQIVCQAV VNEDPNAKLI RELNEEVIKL RHILKDKGI- 381
M.musculus KIF1A  ALSPADINYD ETLSTLRYAD RAKQIRCNAI INEDPNNKLI RELKDEVTRL RDLLYAQGL- 388
Conservation

                                  440                                 460                                 480
A.fumigatus Kin3  GAAGG----- --MPAEEYYP PDTPLEKQMV SIQKADGTIT KVSKA----- ---EIVEQLN 442
A.oryzae Kin3     GAAGGAVAAA GGVPPEEYYP PDTPLEKQVV SIQKPDGSIT KVSKA----- ---EIVEQLN 450
A.nidulans UncA   GATAGA---A GGVVADEVYP PDTPMEKQMV SIQQPDGTIK KVSKA----- ---EIVEQLN 445
N.crassa Nkin2    GDTH------ --VPGEEVYA EGTPLEKQIV SITTPDGTVK KVSKA----- ---EIAEQLN 443
U.maydis Kin3     ---------- GGADGESNWD PSIPPDKQVV RYQTKTGEIK TVTKA----- ---ELQEQLE 435
C.elegans Unc104  ---------- -DVTDVQETP GKHKKGPKLP A--------- HVHEQL---- -------EKLQ 411
M.musculus KIF1A  ---------- GDITDMTNAL VGMSPSSSLS ALSSRAASVS SLHERILFAP GSEEAIERLK 438
Conservation

                                  500                                 520                                 540
A.fumigatus Kin3  QSEKLYKDLN QTWEEKLEKT ERIHREREAA LEELGISI-- EKGFVGLSTP KKMPHLVNLS 500
A.oryzae Kin3     QSEKLYKDLN QTWEEKLVKT EQIHKEREAA LEELGISI-- EKGFIGLSTP KKMPHLVNLS 508
A.nidulans UncA   QSEKLYKDLN QTWEEKLIKT EQIHKEREAA LEELGISI-- EKGFIGLSTP KKMPHLVNLS 503
N.crassa Nkin2    QSEKLLQDLN QTWEQKLQKT EEIHKEREAA LEELGISI-- EKGFIGMSTP KKMPHLVNLS 501
U.maydis Kin3     QSEKIMSSLN ESWEEKLTKT QEIQKEREKA LEELGISV-- DKGNVGVHTP KKLPHLVNLN 493
C.elegans Unc104  ESEKLMAEIG KTWEQKLIHT EEIRKQREEE LRDMGLACAE DGTTLGVFSP KKLPHLVNLN 471
M.musculus KIF1A  ETEKIIAELN ETWEEKLRRT EAIRMEREAL LAEMGVAMRE DGGTLGVFSP KKTPHLVNLN 498
Conservation
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                                 560                                 580                                 600
A.fumigatus Kin3  DDPLLAECLV YNIKPGTTTV GNMEQGSH-- VEIRLNGSKI LPNHCTFENV ----DNVVT 553
A.oryzae Kin3     DDPLLAECLV YNIKPGTTMV GNMDQGSH-- VEIRLNGSKI LANHCKFENV -----DNVVT 561
A.nidulans UncA   DDPLLAECLV YNLKPGVTHV GNMDQGNH-- VEIRLNGSKI LADHCKFENV -----DNVVT 556
N.crassa Nkin2    DDPLLAECLV YNLKPGSTSV GNVESNAEHQ ANIRLNGSRI LHEHCVFENA A----DGTVT 557
U.maydis Kin3     EDPLMSECLI YQIKPGHTLV GNLDSGPD-- VHIKLSGTKI LNKHCMFDH- Q----DGLVT 546
C.elegans Unc104  EDPLMSECLI YYLKEGVTSV GRPV--AEHR PDILLSGEAI LELHCEFINE D---GNVTLT 526
M.musculus KIF1A  EDPLMSECLL YYIKDGVTRV GRED--AERR QDIVLSGHFI KEEHCIFRSD SRGGGEAVVT 556
Conservation
                                 620                                 640                                 660
A.fumigatus Kin3  IVPSEGAAVM VNGLRI--DK PKRLKSGFRI ILGDFHIFRF NHPQEARAER VE----QSLL 607
A.oryzae Kin3     IVPGEGAAVM VNGLRI--DK PKRLKSGFRV ILGDFHIFRF NHPQEARAER ---------- 609
A.nidulans UncA   ILPSEGAAVM VNGVRV--DK PKRLKSGYRI ILGDFHIFRF NHPQEARAER VE----QSLL 610
N.crassa Nkin2    VIPKEGAAVM VNGKRV--TE PTRLHSGYRI ILGDFHIFRF NHPLEAKAER AERAEQQSLL 615
U.maydis Kin3     VTAMPDSMTM VNGKRLAPDE PKRLRSGYRV ILGDFHVFRF NHPEEVRKAR DRVRSTLAL- 605
C.elegans Unc104  MKP--NASCY INGKQV--TT PTVLHTGSRV ILGEHHVFRY NDPQEARQSR HNL-------- 575
M.musculus KIF1A  LEPCEGADTY VNGKKV--TE PSILRSGNRI IMGKSHVFRF NHPEQARQER ERTP------ 608
Conservation
                                 680                                 700                                 720
A.fumigatus Kin3  RHSVTTSQLG ----SPAPTK THDRTMSKTG SELDGD--SS RADSPMQAQR G-GEADWFYA 660
A.oryzae Kin3     ---------- ---------- ---------- ---------- ---------- ---------- 609
A.nidulans UncA   RHSVTTSQLA ----SPAPGK AHERNVSKA- SDLDWD--SS RADSPMGFQR G-RESDWFYA 662
N.crassa Nkin2    RQSLTANQLQ ALEKSPNLSP SHNHQQSLST AVSEGD--SS RPDSPAPFSR NTKESDWSFA 673
U.maydis Kin3     ---------- ----STGE AHNETL---- --IDGDLPST RPDSPA---- -SGDVDWTYA 638
C.elegans Unc104  ---------- ---------- ---------- ---------- ---------- ---------- 588
M.musculus KIF1A  ---------- ---------- ---------- ---------- ---------- ---------- 622
Conservation
                                 740                                 760                                 780
A.fumigatus Kin3  RREAVSAIL- GPDH-ISHMP DDELDALFED VQKVRATRRG LVENEDDSDS LSSFPVRDKY 718
A.oryzae Kin3     ---------- ---------- ---------- ---------- ---------- ---------- 612
A.nidulans UncA   RREAVSAGM- DPDR-LAHMP DDELDALFEN VQNVRANRRG LLENEEDSDS LSSYPIRDKY 720
N.crassa Nkin2    RREAAGAIL- GTDQNFAKLT DEELNALFED VQRARAERVN VREGDEDIES MASYPTREKY 732
U.maydis Kin3     RREYTMAKLN GQNVNFDNLN EEDLEKLFED ISRARSKK-- ---------- ---------- 676
C.elegans Unc104  QQE------- ---------- ---------- ---------- ---------- ---------- 591
M.musculus KIF1A  QRE------- ---------- ---------- ---------- ---------- ---------- 625
Conservation
                                 800                                 820                                 840
A.fumigatus Kin3  MSNGTIDNFS LDTAITMPGT PGQQYDGEGQ NGS-DF---- TLQAARQDMQ RHLDKQKEEF 773
A.oryzae Kin3     ---------- ---------- ---------- NGG-DT---- ALQSVRQDMQ RQLDQQKEEY 640
A.nidulans UncA   MSNGTIDNFS LDTAITMPGT P--------R HGDEDA---- TLQSVRQDMQ RQLERQKEQY 768
N.crassa Nkin2    LSTGTLDNFS LDTALTMPST P--------K QAETEE---- KLGQIRDVMQ GQLDKQKEEY 780
U.maydis Kin3     ---------S MGSVLGRPES RASLFDDNAS ESASSVIRPY SHGALTDDTS IDPWSQAGSE 727
C.elegans Unc104  ---------- ---------- ---------- ---------- LLDKQGIDLK ADMEKKMLEM 611
M.musculus KIF1A  ---------- ---------- ---------- ---------- LLEKQGIDMK QEMEQRLQEL 645
Conservation
                                 860                                 880                                 900
A.fumigatus Kin3  KNKLRIAE-A SDQDADELRL EKERMEEALR STKEEYEEQL RKQKEAFENH MKEMGQPVPR 832
A.oryzae Kin3     QEKLRNAELS SGQGVENIRS EKARMEEALR AAKEEFEEQL RKQKEVFESH IKDMGQPLPK 700
A.nidulans UncA   LDKLRESEAS PSQGIDELRS EKARMEDALR VAKEEYEEQL RKQKEAFETH MKALGHPVPR 828
N.crassa Nkin2    KDQLKTAEAA NVE-VEEIKK EKARMEETLM QLKVDMQKQL EMQRRQFEDK IEKL-DPLKR 838
U.maydis Kin3     MGSMRFSAGT PIK--ENAYT GAGASSPALV AASHRETESL RAKVREYEEK LTRMANGSPR 785
C.elegans Unc104  ESQYRREKVE LEQKMYHQTR EYESMIENLQ KQVDLAQSYI SGGGSIWEGE RMLTSSLLEF 671
M.musculus KIF1A  EDQYRRERER ATYLLEQQRL DYESKLEALQ KQMD-SRYY- ---PEVNEEE --------EE 692
Conservation
                                 920                                 940                                 960
A.fumigatus Kin3  IYENGFAKLD EREIRIATSV FRHWSQHNYV RMAEKILQHA SLLKEAQVMS QIMDKNVSFQ 892
A.oryzae Kin3     IYENGFAKLD TRELEIARSV FLHWSQQNYV RMAEKVLQHA SLLKEAQVMS HIMDKNIVFQ 760
A.nidulans UncA   IYENGYPKLS PRELEVARSV FRHWSQQNYV RMAEKVLQHA SLLKEAQVMS HIMDKNVVFQ 888
N.crassa Nkin2    PKAN--PKLS ADEIERAKAV VKKWRSRRYV LMAEAVLQHA ATLKEAQVMS HELNESVVFQ 896
U.maydis Kin3     LADEPIEYSD TQKA-LLRKV LVKWKAHTKV SMAEDALCKA VLVKEANVIS KELAKRVTYQ 844
C.elegans Unc104  PE-E--LKWT SDQKRVVLKA AIKWRYHQFT SVRDDLWGNA IFVKEANAIS VELKKKVQFQ 728
M.musculus KIF1A  PEDE--VQWT ERECELALWA FRKWKWYQFT SLRDLLWGNA IFLKEANAIS VELKKKVQFQ 750
Conservation
                                 980                                 1.000                               1.020
A.fumigatus Kin3  FAIIDHGHNM ASSYDL-VLN GIS--GD-ED VVLEEAKKPC IAVRVIDSKQ RVIHLWSIEK 948
A.oryzae Kin3     FAVIDHGHNM ASSYDL-VLN GIS--GD-ED IVLDEAKKPC IAVRVIDFKQ CVIHLWSIEK 816
A.nidulans UncA   FAIVDHGHNM ASSYDL-VLN GIS--GD-ED IILDDAKKPC VAVRVMDFKQ CVIHLWSIEK 944
N.crassa Nkin2    FTIVDVGHLL CSSYDM-VLN GLT--GEGDD IALETALKPC VGIRVIDYKH SVVHLWSIEK 953
U.maydis Kin3     YTIVDDFPLA VPTSGVEAIA GLTEFDDVSD PDLASCAKPC MGIKVLDYLH STCYVWSMPK 904
C.elegans Unc104  FALLTD--TM YSPLPPDLL- ---PP--GED LTLRPYPKTV VAIQVQDLKN GATHYWSIEK 780
M.musculus KIF1A  FVLLTD--TL YSPLPPDLL- ---PPEAAKD RETRPFPRTI VAVEVQDQKN GATHYWTLEK 804
Conservation
                                 1.040                               1.060                               1.080
A.fumigatus Kin3  LHRRLQAMRQ LHQY------ IDRPDYIQHF RLENPFSEPC SPQFSLVGDA DIPLTAVFET 1002
A.oryzae Kin3     LQRRLQAMRQ LHQY------ IDRPDYIQHF KLENPFSEPC SPQYSMVGDA DIPLTAVFET 870
A.nidulans UncA   LQRRVQAMRQ LHQY------ IDRPDYIQHF KLENPFSEPC SPQYSLVGDA DIPLTAVFET 998
N.crassa Nkin2    LHDRVRQMRQ MFQY------ LDQPEYAQHL SLDNPFVETC MPQYTLVGEV DVPLKTVFES 1007
U.maydis Kin3     FEQRLQKMRN LYTF------ VDKPEYSKHL NWSDPFYEAP HPTYAFVAST LVPLTPLSRQ 958
C.elegans Unc104  LKQRLEAMRD MYETDAEMSP ADGDPMMDAL MGTDPFYDR- FPWFRMVGRA FVYLNNLL-- 837
M.musculus KIF1A  LRQRLDLMRE MYDRAAEVPS SVVEDCDNVV TGGDPFYDR- FPWFRLVGRA FVYLSNLL-- 861
Conservation
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                                  1.100                                   1.120                                   1.140
A.fumigatus Kin3  RVQDFSVEVI  SPYTQNVVG-  ------IVRL  SLEPSSA---  ----------Q  A---------  1034
A.oryzae Kin3     RVQDFSVEAT  SPYTQNVIG-  ------IIRL  SLEPSSA---  ----------Q  A---------  902
A.nidulans UncA   RVQDFSVDVI  SPYTQGVVG-  ------IIRL  SLEPSSA---  ----------Q  A---------  1030
N.crassa Nkin2    RVQDFTLDVT  SPHTSHAIG-  ------MIKL  ALEPSSA---  ----------R  A---------  1039
U.maydis Kin3     LSAKYRLPLH  DRHTAKQIGW  CSVSVKFVSL  SPVPVSA---  ----------R  AGGTALPAPS  1006
C.elegans Unc104  ----HNVPLI  --HKVAVVNE  KGEVKGYLKV  AIEPVQKDEV  I-NQKKGVRQ  --TAKLHFRK  888
M.musculus KIF1A  ----YPVPLV  --HRVAIVSE  KGEVKGFLRV  AVQAISADEE  APDYGSGVRQ  SGTAKISFDD  915
Conservation

                                  1.160                                   1.180                                   1.200
A.fumigatus Kin3  -------PSS  ----------  ----------  ----------  ----T-----  ----------  1038
A.oryzae Kin3     -------PSS  ----------  ----------  ----------  ----T-----  ----------  906
A.nidulans UncA   -------PSS  ----------  ----------  ----------  ----T-----  ----------  1034
N.crassa Nkin2    -------PTN  ----------  ----------  ----------  ----T-----  ----------  1043
U.maydis Kin3     GSRNPSSPTS  ----------  ----------  ----------  ----SSCTNG  IVNP------  1026
C.elegans Unc104  EDFLKSHKNG  ----------  ----------  ----------  ---ETSDSDA  LAFP------  909
M.musculus KIF1A  QHFEKFQSES  CPVVGMSRSG  TSQEELRIVE  GQGQGADAGP  SADEVNNNTC  SAVPPEGLMD  975
Conservation

                                  1.220                                   1.240                                   1.260
A.fumigatus Kin3  ----------  ----------  ---LKFNVVM  RDMVGFAEWE  GTDVHAQL-F  VP--------G  1067
A.oryzae Kin3     ----------  ----------  ---LKFNVVM  RDMVGFAEWE  GTDVHAQL-F  VP--------G  935
A.nidulans UncA   ----------  ----------  ---LKFNVVM  RDMAGFAEWE  GTDVHAQL-F  VP--------G  1063
N.crassa Nkin2    ----------  ----------  ---LKFNVVM  HEMIGFAERE  GTEVHAQL-F  IP--------G  1072
U.maydis Kin3     ----------  --------LV  GQKLGFQILV  DAISGISSDD  FASIHLQV-K  LSSFAGNELG  1067
C.elegans Unc104  ----------  -----EHMQE  EVEFCFRVVV  LQAIDVAD-T  YSDVFCQFNF  LHR-------  946
M.musculus KIF1A  SPEKAALDGP  LDTALDHLRL  GSTFTFRVTV  LQASSISA-E  YADIFCQFNF  IHR-------  1027
Conservation

                                  1.280                                   1.300                                   1.320
A.fumigatus Kin3  ISEEGGATTT  QMISGFDESP  IRFESVHSMS  LP---LSSPR  TSALKICIYA  RVTQMHLDKL  1124
A.oryzae Kin3     ISEEGGATTT  QMINGFDESP  IRFESVHSMS  LP---LSSPR  SAALKVCVYA  RVTQMHLDKL  992
A.nidulans UncA   ISEEGGATTT  QMISGFNETP  VRFESVHSMS  LP---LTSPR  NAALKICVYA  RVTTMHLDKL  1120
N.crassa Nkin2    ISEEDGITTT  QMIRDFDEGP  IRFESVHSMS  IP---LFASQ  DTSLRVAIFA  KVSAMHLDKL  1129
U.maydis Kin3     KDEIYTSIPV  DLVNQESLAE  VRLRRTLSFV  LTPETIQWLR  TGAAPIEVYA  KLRPHYLVAL  1127
C.elegans Unc104  --HDEAFSTE  PMKNSKS--P  LTFEHTQNLH  IKMSKTFLHY  LHHFPIIF--  EVFGHFQPKS  1000
M.musculus KIF1A  --HDEAFSTE  PLKNTGRGPP  LGFYHVQNIA  VEVTKSFIEY  IKSQPIVF--  EVFGHYQ---  1080
Conservation

                                  1.340                                   1.360                                   1.380
A.fumigatus Kin3  ISWDEMR---  ----------  ---DSAELPP  QKRKA-----  -PRIAESEFF  SEERHDVFAR  1162
A.oryzae Kin3     LSWDDMR---  ----------  ---DSAEPPP  QKRKT-----  -PRIPESEFY  SEERHDVFAR  1030
A.nidulans UncA   LSWDDMR---  ----------  ---DLAEQGA  QDQKT-----  -PRIAESEYF  SEERHDVFAR  1158
N.crassa Nkin2    LSWDDMR---  ----------  ---DAVPTSH  SKPKG-----  -ARINESHFY  TEGKHDLLAR  1167
U.maydis Kin3     EQHDSARESE  GQQHAAAFVP  LHDDSRSLTA  GQQKTMSNTI  KERLSENEMR  NEERHFILAS  1187
C.elegans Unc104  EQFNFERQ-N  SALGRRLSTK  LTFQQPSLVI  STP-VKSKKA  NAPIQNNNAS  VKSKHDLLVW  1058
M.musculus KIF1A  -QHPFPPLCK  DVLSPLRPSR  RHFPRV-MPL  SKP-VPATKL  STMTRPSPGP  CHCKYDLLVY  1137
Conservation

                                  1.400                                   1.420                                   1.440
A.fumigatus Kin3  VQVLELAESG  EYLPVEVVQN  NSLDA-GTYQ  LHQGLQRRVL  VSLTYNSTEG  LPWDDLTNIR  1221
A.oryzae Kin3     TQLLELAETG  DYLPVEVVQS  NNLDA-GTYQ  LHQGLQRRIM  INLTYSSTES  LPWDDLINIR  1089
A.nidulans UncA   LQVLEMTETG  DYLPVEVVQN  SPTEV-GTYQ  LHQGLQRRIS  VNLTYSSTEA  LPWDDLTNIR  1217
N.crassa Nkin2    VQILELNEEG  DYVPVEVTQT  SELDN-GTFQ  LHQGLQRRVA  ITVTHSSGDA  LPWNDATSLR  1226
U.maydis Kin3     VQICELDASG  EYMPVPVRAS  SALDP-GSFF  LRQGLQRKLV  LQLAHDSGRQ  FLWSRVTKLE  1246
C.elegans Unc104  FEICELANNG  EYVPTIVDHA  QGLPTHGIFL  LHQGIQRRIK  ITICHEKGE-  LKWKDCQELV  1117
M.musculus KIF1A  FEICELEANG  DYIPAVVDHR  GGMPCMGTFL  LHQGIQRRIT  VTLLHETGSH  IRWKEVRELV  1197
Conservation

                                  1.460                                   1.480                                   1.500
A.fumigatus Kin3  VGSVRLLDPW  GKIPDQDLQT  PDVPLKF-VQ  EPAVKDNADG  TSNVTLVAQW  DSSLHGSLLL  1280
A.oryzae Kin3     VGSVRLLDPW  GKIPDQDLQT  PDVPLKF-VQ  EPVRKDNADG  TSNVTIIGQW  DSSLHGSLLL  1148
A.nidulans UncA   VGSVRLLDPW  GKIPDQDLQT  PDVPLKF-IQ  EPMVKDNADG  TSNITLVGQW  DSSLHNSLLL  1276
N.crassa Nkin2    VGKIALLDSA  GKTPDMGSAS  PPLPLRL-VT  EPTFRVNANG  TRSVTLIGQW  DSSLHNSLLL  1285
U.maydis Kin3     LADVRLLDSR  GRVHG-GKAS  DAVQLKTPLK  QQSVEFANNG  TSQLELWAWW  DSSVHDSLHL  1305
C.elegans Unc104  VGRIRAGPEW  ----AGG-DD  VDVLSLGLFP  GTFMEFSMDD  RTFFQFEAAW  DSSLHNSPLL  1172
M.musculus KIF1A  VGRIRNTPET  ----DEALID  PNILSLNILS  SGYVHPAQDD  RTFYQFEAAW  DSSMHNSLLL  1253
Conservation

                                  1.520                                   1.540                                   1.560
A.fumigatus Kin3  DRVTADKYRV  QVTVRWDLVS  SRLQDPVPFE  VDLTLQIQGR  TYVRP-----  -QSMFKQLFN  1334
A.oryzae Kin3     DRVTADKYRV  QVTVRWELIS  SRLQDSVPFE  VDLTLQIQGR  TYVRP-----  -QSMFKQFFN  1202
A.nidulans UncA   DRVTAEKYRV  QVTVRWDLQS  SRLQDPVSFE  IDLTLQVQGR  TYIRP-----  -QSMFKNFFS  1330
N.crassa Nkin2    DRITSEKYRV  QMTVSWEINS  EKLAEPIKFS  LPVAVQVVSR  NFVRQ-----  -TSMFSSLWQ  1339
U.maydis Kin3     NRTTSAGHRV  LIRLSFEIQV  DRCSAPAAFS  MDLAVSINGR  D-AKP-----  -PGRLMSFIE  1358
C.elegans Unc104  NRVSNYGDQI  YMTLSAYMEL  DGCAQPAVVT  KDLCLLIYAR  DSKISAASRF  CRSLVG-GIS  1231
M.musculus KIF1A  NRVTPYREKI  YMTLSAYIEM  ENCTQPAVIT  KDFCMVFYSR  DAKLPA-SRS  IRNLFGSGSL  1312
Conservation

                                  1.580                                   1.600                                   1.620
A.fumigatus Kin3  STRVVHSTVR  MFSLAIR---  ----PVSAKR  AADLWRMNTQ  NDYVKGEELL  ARWSPRKISL  1387
A.oryzae Kin3     STRIVHSTVR  MFSLAVR---  ----PVSAKR  AADLWRMNTQ  NDYVKGEELL  TTWSPRKVSL  1255
A.nidulans UncA   TTRVVHSTVR  MYSVAVR---  ----PVSAKR  AADLWRMNTQ  NDYVKGEEFL  TKWAPRKVSL  1383
N.crassa Nkin2    NIRIVHSSTG  IFTVQMR---  ----PAPIKR  VGDLWRMSSQ  HDYVKGEENL  GTWTPRGVSL  1392
U.maydis Kin3     GSTSMTKTSA  IFEVRLV---  ----PPMMKR  PCELWRLDTG  SKYVRGQEML  GGWKARGVSL  1411
C.elegans Unc104  KSPEMNRVPG  VYQLCLKDGS  DSGSPGAIRR  QRRV--LDTS  SAYVRGEENL  GQWRPRGDSL  1289
M.musculus KIF1A  RATEGNRVTG  VYELSLCHVA  DAGSPGMQRR  RRRV--LDTS  VAYVRGEENL  AGWRPRSDSL  1370
Conservation
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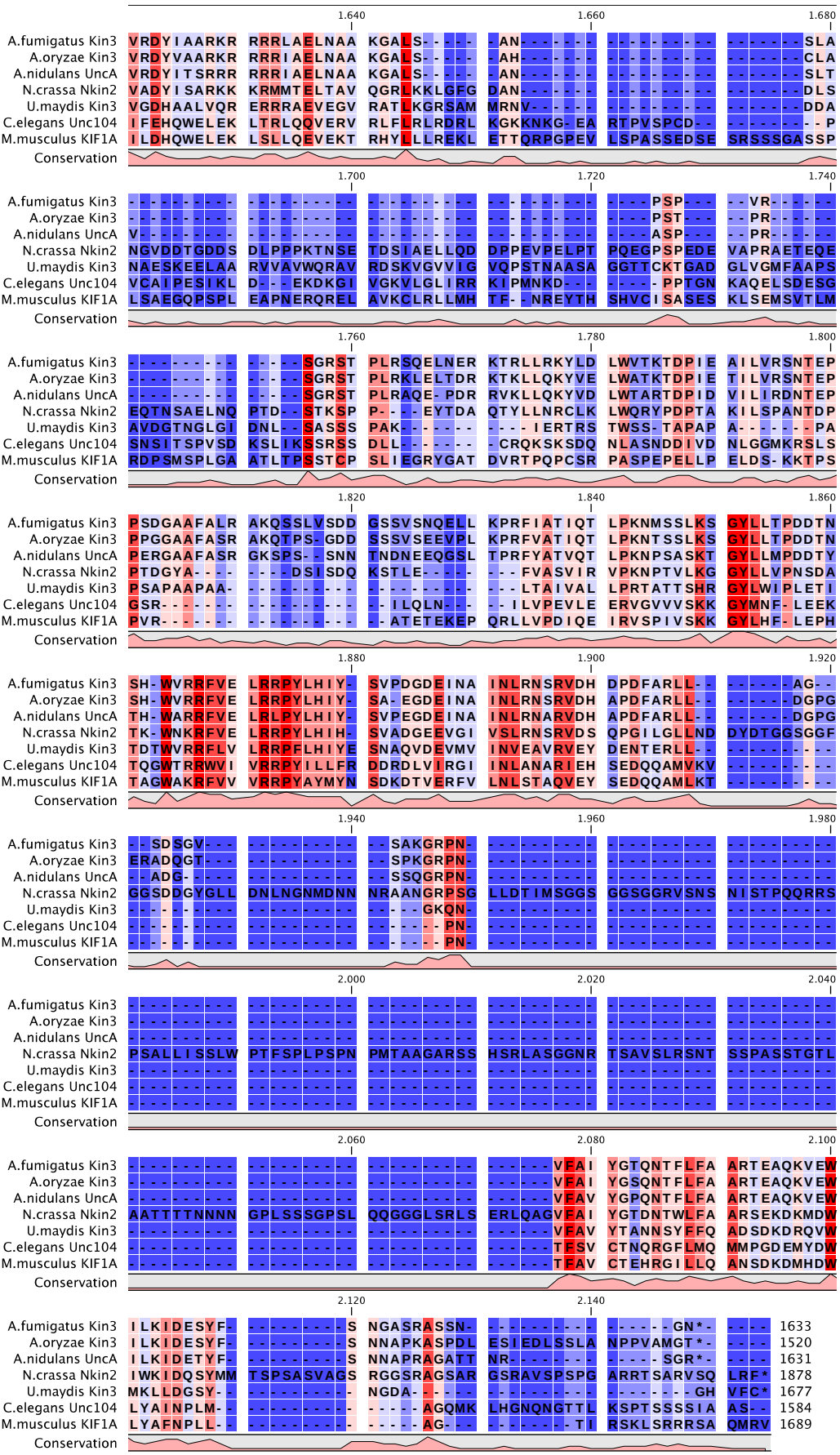
1.640 1.660 1.680
A.fumigatus Kin3 VRDYIAARKR RRRLAELNAA KGALS---- --AN------ ---------- ------SLA 1417
A.oryzae Kin3 VRDYVAARKR RRRIAELNAA KGALS---- --AH------ ---------- ------CLA 1285
A.nidulans UncA VRDYITSRRR RRRIAELNAA KGALS---- --AN------ ---------- ------SLT 1413
N.crassa Nkin2 VADYISARKK KRMMTELTAV QGRLKKLGFG DAN------ ---------- ------DLS 1428
U.maydis Kin3 VGDHAALVQR ERRRAEVEGV RATLKGRSAM MRNV------ ---------- ------DDA 1448
C.elegans Unc104 IFEHQWELEK LTRLQQVERV RLFLRLRDRL KGKKNKG-EA RTPVSPCD-- -------- P 1337
M.musculus KIF1A ILDHQWELEK LSLLQEVEKT RHYLLLREKL ETTQRPGPEV LSPASSEDSE SRSSSGASSP 1430
Conservation
1.700 1.720 1.740
A.fumigatus Kin3 ---------- ---------- ---------- ---------- ----PSP--- --VR------ 1422
A.oryzae Kin3 ---------- ---------- ---------- ---------- ----PST--- --PR------ 1290
A.nidulans UncA V--------- ---------- ---------- ---------- ----ASP--- --PR------ 1419
N.crassa Nkin2 NGVDDTGDDS DLPPPKTNSE TDSIAELLQD DPPEVPELPT PQEGPSPEDE VAPRAETEQE 1488
U.maydis Kin3 NAESKEELAA RVVAVWQRAV RDSKVGVVIG VQPSTNAASA GGTTCKTGAD GLVGMFAAPS 1508
C.elegans Unc104 VCAIPESIKL D---EKDKGI VGKVLGLIRR KIPMNKD--- -----PPTGN KAQELSDESG 1386
M.musculus KIF1A LSAEGQPSPL EAPNERQREL AVKCLRLLMH TF--NREYTH SHVCISASES KLSEMSVTLM 1488
Conservation
1.760 1.780 1.800
A.fumigatus Kin3 ---------- ------SGRST PLRSQELNER KTRLLRKYLD LWVTKTDPIE AILVRSNTEP 1467
A.oryzae Kin3 ---------- ------SGRST PLRKLELTDR KTKLLQKYVE LWATKTDPIE TILVRSNTEP 1335
A.nidulans UncA ---------- ------SGRST PLRAQE-PDR RVKLLQKYVD LWTARTDPID VILIRDNTEP 1463
N.crassa Nkin2 EQTNSAELNQ PTD--STKSP P---EYTDA QTYLLNRCLK LWQRYPDPTA KILSPANTDP 1542
U.maydis Kin3 AVDGTNGLGI DNL--SASSS PAK------- ----IERTRS TWSS-TAPAP A-------PA 1547
C.elegans Unc104 SNSITSPVSD KSLIKSSRSS DLL------- -CRQKSKSDQ NLASNDDIVD NLGGMKRSLS 1438
M.musculus KIF1A RDPSMSPLGA ATLTPSSTCP SLIEGRYGAT DVRTPQPCSR PASPEPELLP ELDS-KKTPS 1547
Conservation
1.820 1.840 1.860
A.fumigatus Kin3 PSDGAAFALR AKQSSLVSDD GSSVSNQELL KPRFIATIQT LPKNMSSLKS GYLLTPDDTN 1527
A.oryzae Kin3 PPGGAAFASR AKQTPS-GDD SSSVSEEVPL KPRFVATIQT LPKNTSSLKS GYLLTPDDTN 1394
A.nidulans UncA PERGAAFASR GKSPS--SNN TNDNEEQGSL TPRFYATVQT LPKNPSASKT GYLLMPDDTY 1521
N.crassa Nkin2 PTDGYA---- ----DSISDQ KSTLE----- ---FVASVIR VPKNPTVLKG GYLLVPNSDA 1586
U.maydis Kin3 PSAPAAPAA- ---------- ---------- ---LTAIVAL LPRTATTSHR GYLWIPLETI 1583
C.elegans Unc104 GSR------- ---------- --ILQLN--- --ILVPEVLE ERVGVVVSKK GYMNF-LEEK 1473
M.musculus KIF1A PVR------- ---------- --ATETEKEP QRLLVPDIQE IRVSPIVSKK GYLHF-LEPH 1587
Conservation
1.880 1.900 1.920
A.fumigatus Kin3 SH-WVRRFVE LRRPYLHIY- SVPDGDEINA INLRNSRVDH DPDFARLL-- ------AG-- 1575
A.oryzae Kin3 SH-WVRRFVE LRRPYLHIY- SA-EGDEINA INLRNSRVDH APDFARLL-- ------DGPG 1443
A.nidulans UncA TH-WARRFVE LRLPYLHIY- SVPEGDEINA INLRNARVDH APDFARLL-- ------DGPG 1571
N.crassa Nkin2 TK-WNKRFVE LRRPYLHIH- SVADGEEVGI VSLRNSRVDS QPGILGLLND DYDTGGSGGF 1644
U.maydis Kin3 TDTWVRRFLV LRRPFLHIYE SNAQVDEVMV INVEAVRVEY DENTERLL-- ---------- 1631
C.elegans Unc104 TQGWTRRWVI VRRPYILLFR DDRDLVIRGI INLANARIEH SEDQQAMVKV ---------- 1523
M.musculus KIF1A TAGWAKRFVV VRRPYAYMYN SDKDTVERFV LNLSTAQVEY SEDQQAMLKT ---------- 1637
Conservation
1.940 1.960 1.980
A.fumigatus Kin3 --SDSGV--- ---------- --SAKGRPN- ---------- ---------- ---------- 1587
A.oryzae Kin3 ERADQGT--- ---------- --SPKGRPN- ---------- ---------- ---------- 1457
A.nidulans UncA --ADG----- ---------- --SSQGRPN- ---------- ---------- ---------- 1581
N.crassa Nkin2 GGSDDGYGLL DNLNGNMDNN NRAANGRPSG LLDTIMSGGS GGSGGRVSNS NISTPQQRRS 1704
U.maydis Kin3 ---------- ---------- ------GKQN- ---------- ---------- ---------- 1635
C.elegans Unc104 ---------- ---------- ------PN- ---------- ---------- ---------- 1525
M.musculus KIF1A ---------- ---------- ------PN- ---------- ---------- ---------- 1639
Conservation
2.000 2.020 2.040
A.fumigatus Kin3 ---------- ---------- ---------- ---------- ---------- ---------- 1587
A.oryzae Kin3 ---------- ---------- ---------- ---------- ---------- ---------- 1457
A.nidulans UncA ---------- ---------- ---------- ---------- ---------- ---------- 1581
N.crassa Nkin2 PSALLISSLW PTFSPLPSPN PMTAAGARSS HSRLASGGNR TSAVSLRSNT SSPASSTGTL 1764
U.maydis Kin3 ---------- ---------- ---------- ---------- ---------- ---------- 1635
C.elegans Unc104 ---------- ---------- ---------- ---------- ---------- ---------- 1525
M.musculus KIF1A ---------- ---------- ---------- ---------- ---------- ---------- 1639
Conservation
2.060 2.080 2.100
A.fumigatus Kin3 ---------- ---------- ---------- ------VFAI YGTQNTFLFA ARTEAQKVEW 1611
A.oryzae Kin3 ---------- ---------- ---------- ------VFAI YGSQNTFLFA ARTEAQKVEW 1481
A.nidulans UncA ---------- ---------- ---------- ------VFAV YGPQNTFLFA ARTEAQKVEW 1605
N.crassa Nkin2 AATTTTNNNN GPLSSSGPSL QQGGGLSRLS ERLQAGVFAI YGTDNTWLFA ARSEKDKMDW 1824
U.maydis Kin3 ---------- ---------- ---------- ------VFAV YTANNSYFFQ ADSDKDRQVW 1659
C.elegans Unc104 ---------- ---------- ---------- ------TFSV CTNQRGFLMQ MMPGDEMYDW 1549
M.musculus KIF1A ---------- ---------- ---------- ------TFAV CTEHRGILLQ ANSDKDMHDW 1663
Conservation
2.120 2.140
A.fumigatus Kin3 ILKIDESYF- ---------S NGASRASSN- ---------- ------GN*- ---- 1633
A.oryzae Kin3 ILKIDESYF- ---------S NNAPKASPDL ESIEDLSSLA NPPVAMGT*- ---- 1520
A.nidulans UncA ILKIDETYF- ---------S NNAPRAGATT NR-------- ------SGR*- ---- 1631
N.crassa Nkin2 IWKIDQSYMM TSPSASVAGS RGGSRAGSAR GSRAVSPSPG ARRTSARVSQ LRF* 1878
U.maydis Kin3 MKLLDGSY-- ---------- NGDA------ ---------- ---------GH VFC* 1677
C.elegans Unc104 LYAINPLM-- ---------- -----AGQMK LHGNQNGTTL KSPTSSSSIA AS-- 1584
M.musculus KIF1A LYAFNPLL-- ---------- -----AG--- ------TI RSKLSRRRSA QMRV 1689
Conservation