

PEN3
Os01g0609300

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1: MDYNPNLPPL GGGGVSMRRS ISRSVSRASR NIEDIFSSGS RRTQSVNDDE EALKWAAIEK LPTYSLRLTT LMNAVVEDDV YGNQLMSKEV
1: -----
91: DVTKLDGEDR QKFIDMVFKV AEQDNERILT KLRNRIDRVG IKLPTVEVRY EHLTIKADCY TGNRSLPTLL NVVRNMGESA LGMIGIQFAK
3: -----LG I-LP-----
181: KAQLTILKDI SGVIKPGRMT LLLGPPSSGK TLLLLALAGK LDKSLQVSGD ITYNGYQLDE FVPRKTSAYI SQNDLHVIGIM TVKETLDFSA
10: KQTMPVLHDV SGIKPRRMT LLLGPPSGSK TLLLLALAGR LGKDLKASGK VTYNGHGMEE FVPERTAAYI SQHDLHIGEM TVRETAFSA
271: RCQGVGTRYD LLNELARREK DAGIFPEADV DLFMKASAAQ GVKNSLVTDY TLKILGLDIC KDTIVGDDMM RGISGGQKKR VTTGEMIVGP
100: RCQGVGSRFD MLTELSRREK AANIKPDADI DAFMKAAAMG GQEANVTNDY ILKILGLEIC ADTMVGDEML RGISGGQKKR VTTGEMLVGP
361: TKTLFMEIS TGLDSSTTFQ IVKCLQIVH LNEATVLSL LQAPETFDL FDDIILVSEG QIVYQGRDN ILEFFESFGF KCPERKGTAD
190: ARALFMEIS TGLDSSTTFQ IVNSLRQTVH ILGTAIVISL LQAPETYNL FDDIILLSG QIVYQGPRED VLEFFESMGF KCPDRKGVD
451: FLQEVTSKKD QEYVWPNR PYHYIPSEF ASRYKSFHVG TKMSNELAVP FDKSRGHKAA LVFDKYSVSK RELKSCWDK EWLLMQRNAF
280: FLQEVTSKKD QRQYWARHDK PYRFVTKEF VSAFQSFHTG RAIANELAVP FDKSKSHPA LATTRYGAGP KELLKANIDR EILLMKRNSF
541: FYVFKTVQIV IIAAITSTLF LRTEMNTRNE GDANLYIGAL LFGMIINMFN GFAEMAMMVS RLPVFYKQRD LLFYPSWTF S LPTFLLGIPS
370: VYMFRFTQLM VVSLIAMTLF FRTKMKRDSV TSGGIYMGAL FFGVLMIMFN GFSELALTVF KLPVFFKQRD LLFYPAWSY IPSWILKIPI
631: SILESTAMMV VTYYSIGFAP DASRFFKQFL LVFLIQMAA SLFRLIASVC RTMMIANTGG ALTLLLVFL GGFLLPKGKI PDWWGWAYWV
460: TFIIEGVGVF LTYVYIGFDS NVGSFFKQYL LMLAINQMAG SLFRFIGGAA RNMIVANVFA SFMLLIFMVL GGFILAREV KKKWIIWGYWI
721: SPLTYAFNGL VVNEMFAPRW MNKMASSNST IKLGTMLVNT WDVYHQKNWY WISVGALLCF TALFNILFTL ALTYLNPLGK KAGLLPEEE-
550: SPMMYAQNAI SVNELMGHSW NKIVNSSASN ETLGVQVLKS RGVFPEARWY WIGFGAMIGF TILFNALFTL ALTYLRPYGN SRQSVSEEL
810: ----NEDAD QGKDPMRRL STADGNRRGE VAMG-RMSRD SAAEASGGAG NKKGMVLPFT PLAMSFDDVK YFVDMPGEMR DQGVETRLQ
640: KEKRANLGE IVGDVHLSSG ST----RR-- -PMNGTEND STIVDDDEV TQGMVLPFT PLSLSDFNVR YSDVMPQEMK AQGVADDRLE
894: LLKGVTAFR PGVLTALMGV SGAGKTTLMD VLAGRKTGGY IEGDVRISGF PKVQETFARI SGYCEQTDIH SPQVTVRESL IFSAFRLRPK
723: LLKGVSGSFR PGVLTALMGV SGAGKTTLMD VLAGRKTGGY IEGSINISGY PKKQETFARV SGYCEQNDIH SPQVTVYESL LFSAWLRLPE
984: EVGKDEKMMF VDQVMELVEL DSLRDSIVGL PGVTGLSTEQ RKRLTIABEL VANPSIIFMD EPTSGLDARA AAIMVRAVRN TVDTRTVVC
813: DVDSNTRKMF IEEVMELVEL KSLRDALVGL PGVNLSTEQ RKRLTIABEL VANPSIIFMD EPTSGLDARA AAIMVRTVRN TVNTGRTVVC
1074: TIHQPSIDIF EAFDELMLK RGGQVIYAGP LGQNSHKVVE YFESFPGVSK IPEKYNPATW MLEASSLAAE LKLSVDFAEL YNQSAHQRN
903: TIHQPSIDIF EAFDELFLK RGGEIYAGP LGHHSSELIK YFESIPGVSK IKDGYNPATW MLEVTTIQGE QALGVDFSDI YKKSLEYQRN
1164: KALVKELSVP PAGASDLYFA TQFSQNTWQ FKSCLWKQWW TYWRSPDYNL VRFIPTLATS LLIGTVFWQI GGNRSNAGDL TMVIGALYAA
993: KALIKDLSQP APDSSDLYFP TQYSQSSLTQ CMACLWKQNL SYWRNPPYNA VRFFFTTVIA LLFGTIFWDL GGVKTSQDL FNAMGSMYAA
1254: IIFVGINNCS TVQPMVAVER TVFYRERAAG MYSAMPYAI S QVTCELPYVL IQTVYVSLIV YAMVGFEWKA EKFFWVVFVS YFSFLYWTYY
1083: VLFIGVMNCT SVQPVAVER TVFYRERAAG MYSAPYAFG QVVEIPTYL VQATVYGIIV YAMIGFEWTA AKFFWYLFM VFTLLYFTFY
1344: GMMTVSLTPN QQVASIFASA FYGIFNLFSG FFIPRPKIPK WWIWIYWICP VAWTVYGLIV SQYGDVETRI QVLGGAPDLT VKQYIEDHYG
1173: GMAVGLTPN YHIASIVSSA FYAIWNLFSG FVIPRPVPI WWRWYCWACP VAWTLYGLV SQFGDIET-- PMEDGTP-- VKVVENYFG
1434: FQSDFMGPVA AVLIAFTVFF AFIFAFCI RT LNFQTR-
1258: FKHSWLGWVA TVVAFAFLF ASLFGFAIMK FNFQKR*

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Additional file 3. Sequence alignment of *Arabidopsis* PEN3 and a rice PEN3-like protein