

Table S1 The amino acid sequence of IPT numbers from several species

>AtIPT1

MTELNFHLLPIISDRFTTTTTTSPSFSSSHSSSSSSLLSFTKRRRKHQPLVSSIRMEQSRSRNRK
DKVVVILGATGAGKSRLSVDLATRFPSEIINSDKIQVYEGLEITTNQITLQDRRGVPHHLLG
VINPEHGELTAGEFRSAASN VVKEITSRQKVPIIAGGSNSFVHALLAQRPKFDPFSSGSLI
SSDLRYECCFIWVDVSETVLYEYLLRRVDEMMDSGMFEELSRFYDPVKSGLETRFGIRKAI
GVPEFDGYFKEYPPEKKMIKWDALRKAAYDKAVDDIKRNTWTLAKRQVKKIEMLKDAG
WEIERV DATASFKA VMMKSSSEKKWRENWEEQVLEPSVKIVKRHLVQN

>AtIPT2

MMMLNPSNGGIEGEKMKKKAKVVVIMGPTGSGKSKLAVDLASHFPVEIINADAMQIYSG
LDVLTNKVTVDEQKGVPHHLLGTVSSDMEFTARDFRDFTVPLIEEIVSRNHIPVLVGGTHY
YIQAVVSKFLDDAAEDTECCADVASVVDQDMVVESVFGRDDLSHGYELLKELDPVAA
NRIHPNNHRKINQYLSLHASRGVLP SKLYQGKTAENWGCINASRFDYCLICMDAETA VLD
RYVEQRVDAMVDAGLLDEVYDIYKPGADYTRGLRQSIGVREFEDFLKIHLS ETCAGHLTS
LSNDDKVMKENLRKILNFPKDDKLRLMLEEAIDRVKLNTRRLRRQKRRVSRLETVFGWN
IH YIDATEYILSKSEESWNAQVVKPASEIIRC FLETETESGRDPTSGKSIERDLWTQYVCEAC
GNKILRGRHEWEHHKQGRTHRKRTRHKNSQTYKNREVQAEVN

>AtIPT3

MIMKISMAMCKQPLPPSPTLDFPPARFGPNMLTLNPYGPKDKVVVIMGATGTGKSRLSVDI
ATRFRAEIINSDKIQVHQGLDIVTNKITSEESCGVPHHLLGVLPPEADLTAAANYCHMANLSI
ESVLNRGKLP IIVGGSNSYVEALVDDKENKFRSRYDCCFLWVDVALPVLHGFV SERVDKM
VESGMVEEVREFFDFSNSDYSRGIKKAIGFPEFDRFFRNEQFLNVEDREELLSKVLEEIKRN
TFELACRQREKIERLRKVKKWSIQRV DATPVFTKRRSKMDANVAWERLVAGPSTDTVSRF
LLDIASRRPLVEASTAVAAAMERELSRCLVA

>AtIPT4

MKCNDKMVVIMGATGSGKSSLSVDLALHFKA EIINSDKMQFYDGLKITTNQSTIEDRRGV
PHHLLGELNPEAGEVTAAEFRVMAAE AISEITQRKKLPILAGGSNSYIHALLAKSYDPENY
PFSDHKGSIKSELKYDCCFIWIDVDQSVLFEYLSRLDLMMKSGMFEIEAEFHRSKKAPKE
PLGIWKAIGVQEFDDY LKMYKWDNDMDKWDPMRKEAYEKAVRAIKENTFQLTKDQITK
INKLRNAGWDIKKVDATASFREAIRAAKEGEGVAEMQRKIWNKEVLEPCVKIVRSHLDQP
INYYYYYFYLLKRFLSLN

>AtIPT5

MKPCMTALRQVIQPLSLNFQGNMVDVPFFRRKDKVVVFMGATGTGKSRLAIDLATRFPA
EIVNSDKIQVYKGLDIVTNKVTPEESLGVP HLLGTVHDTYEDFTAEDFQREAIRAVESIV
QRDRVPIIAGGSNSYIEALVNDCVDFRLRYNCCFLWVDVSRPVLHSFV SERVDKM VDMGL
VDEVRRIFDPSSSDYSAGIRRAIGVPELDEF LRSEMRNYP AETTERLLETAIEKIKENTCLLA
CRQLQKIQRLYKQWKWNMHRVDATEVFLRRGEEADEAWDNSVAHPSALAVEKFLSYSD
DHHLEGANILLPEISAVPPLPA AVAAISR

>AtIPT6

MQQLMTLLSPPLSHSSLLPTVTTKFGSPRLVTTCMGHAGRKNIKDKVVLITGTTGTGKSRL
SVDLATRFFPAEIINSDKMQIYKGFEIVTNLIPLHEQGGVPHHLLGQFHPQDGELTPAEFRSL
ATLSISKLISSKKLPVVVGGNSFNHALLAERFDPDIDPFSPGSSSLSTICSDLRYKCCILWVDV
LEPVLFQHL CNRVDQMIESGLVEQLAELYDPVVD SGRRLGVRKTIGVEEFDRYFRVYPKE
MDKGIWDLARKAAYEETVKGMKERTCRLVKKQKEKIMKLIRGGWEIKRLDATAAIMAEL

NQSTAKGEGKNGREIWEKHIVDESVEIVKKFLLEV

>AtIPT7

MKFSISSLKQVQPILCFKNKLSKVVNSFLHPKEKVIFVMGATGSGKSRLAIDLATRFQGEI
INSDKIQLYKGLDVLTKVTPKECRGVPHHLLGVFDSEAGNLTATQYSRLASQAISKLSAN
NKLPIVAGGSNSYIEALVNHSSGFLNNYDCCFIWVDVSLPVLNSFVSKRVDRMMEAGLL
EEVREVFNPKANYSVGIRRAIGVPELHEYLRNESLVDRAATSKMLDVAVKNIKKNTEILAC
RQLKKIQR LHKKWKMSMHRVDATEVFLKRNVEEQDEAWENLVARPSERIVDKFYNNNN
QLKNDDVEHCLAASYGGGSGSRAHNMI

>AtIPT8

MQNLTSTFVSPSMIPITSPRLRLPPRSVVPMTTVCMESYKQKVVVIMGATGSGKSCLSID
LATRFSGEIVNSDKIQFYDGLKVTTNQMSILERCGVPHHLLGELPPDDSELTTFEFSRLASR
SISEITARGNLPIIAGGSNSFIHALLVDRFDPKTYPFSSSETSISSGLRYECCFLWVDVSVSVLF
EYLSKRVDQMMESGMFEELAGFYDPRYSGSAIRAHGIHKTIGIPEFDRIYFSLYPPERKQKM
SEWDQARKGAYDEAVQEIKENTWRLAKKQIERIMKLKSSGWDIQRLDATPSFGRSSREIW
DNTVLDESIVVVRFLVKDKV

>AtIPT9

MVIGSGVFLTRTCYLRLQPPSLVLRRRFCAATTACSVPLNGNKKKKSEKEKVIVISGPTGA
GKSRLAMELAKRLNGEISADSQVYKGLDVGSAPSDSDRKVVP HHLIDILHPSQDYSV
GQFYDDGRQATKDILNRGRVPIVTGGTGLYLRWFMYGKPDVPKPSPEVIAEAHDMVLGF
QTEYNWDAAVELV NAGDPKASSLPRNDWYRLRRSLEILKSTGSPSSFRIPYDSFRVNLV
APDADDLEDGSSADISIQNIETDLDYDFLCFFLSSPRVALYRSIDFRCEDMLSGPNGVLSEA
RWLLDLGLLPNSNPATRAIGYRQVNSLFPAMEYLLQCRRYEGESSPREFYAFLNKFQTASR
NFAKRQMTWFRCEPMYHWNASKPLDSILQCIYDAYESEAEEMVEIPESLRMSKDVRDSR
EASELKGYSKRNHRHFVRREDCSSVLEWIRSEGCKSEASCVEAIA

>CsIPT2

LSGIGEREIEGESEMQEGVLVNPSSNGRGKHPKV VIMGATGSGKSRLAIDLALHFPLEI
INADSMQVYQGLDVLTKVPLQDQKGVPHHLLGTISPNEFTAKDFRDSVIPLIDDILSRN
RLPVIVGGTNYIYQALVSPFLDDSDVEDKDENGLSDLHGDKSDSEFEPGRENFCYSYDSLK
DLDPVAANRIHPNDHRKINQYLSLYARFGVLPSKLLQEKAMENWGQADNFRYHCCFICVD
ASLPVLDKYVEQRVDRMVDAGLLNEVYDIYNLNADYTRGLRQAIGVREFEDFLKAYLFQ
VQNDNENHLVDASHFQMSAKKGDQMLKENMMTILNSSNEKERNLLLEDAIDKVKSNTR
RLVRRQKRRLNRLNTLFGWNIHYVDATESLQCASDDSWAAHVVEPSAKIIRSYLSKDESL
VPDSESRTGTEGLKLFQRDLWTQHVCACGNRVL RGAHEWEQHKQGRGHRKRICRLRK
SGGFSFVE

>CsIPT3.1

MWWWRRRPPQYPPPPPSASSKREGGGDGSHRHREVAADFDRPCHPFGGDSEFRQNSSL
RGTKHSDKQNHPEEQRGVPHHLLGLVNPNADFSASTFCDMASFAVRSISSRRKLP IIVGGS
NSYIEALVDDGSHEFRSRYECCFLCVDVSIPVLHSFVSNRVDLMVEMGMVEEVRSFFDLS
GNYSNGIRRAIGVPEFDRIYFRMEGFVNEQVRVRLQEVIREIKGNTRKLATRQLDKIYRL
QNVKGWKLHRLDATDAFRKHGKEADEAWEHLVTGPSSVIVFWWVD

>CsIPT3.2

MGATGTGKSRLSIDLATRFPAEIVNSDKIQAYEGLNIVTNKITAEEQRGVPHHLLGLVNPNA
DFSASTFCDMASFAVRSISSRRKLP IIVGGSNSYIEALVDDENHEFRSRYECCFLCVDVSIPV
LHSFVSNRVDLMVEMGMVEEVRSFFDLSGDYSNGIRRAIGVPEFDRIYFRMEGFVNEQVR

VRMLQEVIKGNTRKLRQLDKIYRLQNVKGWKLHRLDATDAFRKHDKEAAEAW
HLVTGPSSVIVSRFLHNLDNAAALRSPITMTAVMTGASV

>CsIPT5.1

MRISFSPACKQVAQPLVNFPAGGINDPFILRQRKKEKVVVVIGATGTGKSRLAIDLATRLPA
EIINSDKMQVYKGLDIATNKVTDEECRSVPHHLLGIVDPNADFNATDFRHLALHACDSIVR
RNGLPPIAGGSNSYIKALVSDDFEFRSKYDCCFLWVDVKLRVLHSFVSERVDRMVEAGLV
DEVAMFDPNADYKVGIRRAIGVPEMDRFLRSESDPNVDSQTRARLLKQAIIEIKSNTRD
LACRQRKNILSLQTQLGLGLGLDLGLGLGLGPEWSMLHRLDATEVFLRRGAAAAAEAW
RLVAEPSTIIVDRFLHEKDDQQDFMAAIATPASISAAVAATTRNLRCSGRTGGRTLQIQVRL
VKLRDVEDNCWVMGLVGTYYVLPVQVEEVYKSKSKLELNSMQSS

>CsIPT5.2

MGIYAEAQSPWTTIELSHDGTRLRLARLGFFVVTDMRISFSAAIKQAQPLVSFPPGILNMDPF
MARPHSKDKVVVVVGATGTGKSRLSIDLATRFPAEIVNSDKMQVYKGLDIATNKVTDEER
RGVPHHLLGVVDPNVEFTATDFCHHASLAVESIVRRDRLPIAGGSNSYIKALVIDDIEFQSK
YDCCFLWVDVSLPVLHSFVSERVNRMVEIGLVDEIRGIFDPNADHTRGIRRAIGVPEMDQF
LREPNVDDETKALMLKEAIEKIKSNTCKLACCQLENILRLQNQLEWSMHRLDATAFLK
GGNSDGNNIWEKSVAGPSILLVDQFLYEEGFGAFLTSQLRFLWRQL

>CsIPT6.1

MGPTGSGKSRLSIDLATRCFPSEIINSDKMQVYRGLDITTNKIPMHDRLSVPHHLLGHLDPS
QRPDLSPSDFRSAAAATISAIISFRRLPLVVGGGSNSFIYSLVANRFDPGSDVFRESHDPVCS
ELRYDCCFIWVDVALPVLNQYLKRKRVDEMLDSGMFDELADYFEFDDEEASRGTRTGLRK
AIGVPEFEPYFRRFGGGGAPKDDPLRRVAYEEAVRAIKDNTCQLAKRQVGKIQRLKSAGW
DLKRLDATEAFRAAMEDGGSDSGKSDGLVFGVGGGQGREAFYLHSILSESLDLNMHSSS
DGSACKVHPSLRTDGWQI

>CsIPT6.2

MYIYTAQLNTHPHYSITPHQHHPFKLLFKSIVPSFPPPNWAQKKYSTTVSRRKDHHHLQH
LHVHLDQPPQKIVVIMGPTGSGKSRLSIDLATRFFPSEIINSDKMQVYRGLDITTNKIPMHD
RLSVPHHLLGHLDPSQRPDLSPSDFRSAAAATISAIISFRRLPLVVGGGSNSFIYSLVANRFD
GSDVFRESHDPVCSELRYDCCFIWVDVALPVLNQYLKRKRVDEMLDSGMFDELADYFEF
DDEEASRGTRTGLRKAIGVPEFEPYFRRFGGGGAPKDDPLRRVVYEEAVRAIKDNTCQLA
KRQVGKIQRLKSAGWDLKRLDATEAFRAAMEDGGSDSGKSSEIWGKQVLEPSMKIVKRK
LEE

>CsIPT6.3

MYSSCLSSAQQHTHTHLLYSLSHHSSLMRLSFFPTSLLHYSHRLFLSLLLFPPTNTTN
LVSTSSSAPRWSQMITTTRRHQQHQKKKKQKIVVIMGPTGSGKSKLSVDLATRFFPSEIINS
DKIQVYSGLDITTNKIPMHDRRGVPHHLLGDFPPHSDLTSPAFRSAAASIAVSSRRNLPL
IVGGGSNSFIYALAADRFPASDVFDHDPVCPDLRYDCCFLWVDVSMPVLNQYLSKRV
DDMLDSGMFEELQEYFSDQHRRESNSAIRTGLRKAIGVPEFEPYFKKFHPRTNPKEPVR
MAVYEEAVRAIKENTCQLAERQVGKIMRLRNAGWDLRRLDATEVIRAAMKKESCGSDSG
ESWERQVVEPSVKIVKRFL

>CsIPT6.4

MGPTGSGKSTLSVDLATRFFPSEIINSDKIQVYRGLDITTNKIPMHDRRGVPHSAAFAISA
VSSRRKDGCIIRGGSEGQGEHVSAGGEASGEDHAPEERRVGPPATRRHGGYQSGDEEGV
MWVRFRELGETSGGTKREDCEAVFGGV

>CsIPT7.1

MSSMITQSFKNKVVFIMGATGTGKSRLSIDLATNFP AEIINSDKIQIYRGLNIVTNKITNLEC
QEVPHHLLGEFDPDSDFRTARDFCHHALIAIEKIVRFGHIIVGGSNSFIEALVEDPDFKFRSQ
YDCCFIWLDVSLPILHSFVSKRVDQMVDAGIVDEVRELFTPEVDYTRGIRRAIGVREMDR
YFRVEPEIDNETKEMLLGVAIEEIKANTRKLVHTQLTKIHRLRDKL GWPLHRIDATCVFEK
GGQEANHAWHEELVAKPSLEV VNEFLKENKNGVAVKNISSAFVNQRLNGLKVLN

>CsIPT7.2

MGSMSTQFLKNKVVFIMGATGTGKSRLSIDLATNFP AEIINSDKIQMYRGLDIVTNKITNLE
RQRVPHHLLGEFDPDSDFRTARDFCYHALEAIENIIRSGRIPIIVGGSNSFIEALVEDPDFKFKS
QYDCCFIWLDVSLPVLHSFVSKRVDQMVDAGLSWPFLLSNSTLYIFLDGLSDGLFGN

>CsIPT9.1

AGKSRLALELAKRLNGEIISADSVQVYRGLDVGSAKPSLSERKEVPHHLVDILHPSEGYSV
GKFFEDARQATRDILNNGRVPIVTGGTGLYL RWYIYGKPDV PKASPEITSEVYSKLAHFQK
DVDWDAAVQLVVKAGDPWAQSLPTNDWYRLRRSLEI IKASGSPPSAFQVPYDLFREQFDS
SVTDCSLDNYSSGDAHEESES MNLDYEFICFFLSSQRLELYRLIDFRCEDMLS GSDGILSEA
RWLLDIGLLPNSNSATRAIGYRQAMEYLLGCKQRGGSSEEFFAFLCE FQKASRNFAKRQL
TWRFRNERIYHWIDASKPMDEV LNFIYDSYYNQNGSLTVPELSMEREISSRRKSELKGYRT
KNRRFISKYDCSGVLDWIRRT EGENAAKLMSIHR

>CsIPT9.2

MVSGFRGLRACCFRFSHTAAIPLPIHSSALSFRRL FVTNCSASVAGKKEKVIVISGPTGAG
KSRLALELAKRLNGEIISADSVQVYRGLDVGSAKPSLSERKEVPHHLVDILHPSEGYSVGK
FFEDARQATRDILNNGRVPIVTGGTGLYL RWYIYGKPDV PKASPEITSEVYSKLAHFQKDV
DWDAAVQLVVKAGDPWAQSLPTNDWEQFDSSVTDCSLDNYSSGDAHEESES MNLDYEFI
CFFLSSQRLELYRLIDFRCEDMLS GSDGILSEARWLLDIGLLPNSNSATRAIGYRQKRSVEF
VKMGNLVHEAPVKARNFAKRQLTWRFRNERIYHWIDASKPMDEV LNFIYDSYYNQNGSLT
VPESLSMEREISSRRKSELKGYRTKNRRFISKYDCSGVLDWIRRT EVTIIMLSIQSSLRRST
TGASSTHLLRRFYSSDSAPERKVAVLGAAGGIGQPLALLMKLNPLVSKLSLYDIAATPGVA
ADISHINTRSEVNGYMGEDQLGKALEGCDIVIIPAGVPRKPGMNRDDL FNINAGIVKSLCT
AIAKYCPHALVNMISNPVNSTVPIAAEVFKKAGTYDEKKLFGVTMLDVVRAKTFYAEKA
KVPVEGVNVPVVGGHAGITILPLFSQATPQANNLSYEDIEALTKRTQDGGTEVVVAKAGM
GSATLSMAYAGAI FADACLKGLNGVPDVVECSFVQSCITELPFFASKVRLGKNGVEEVLDL
GPLSDYEKQGLESLKPELKSSIEKGIKFVTES

>IPTZ_AGRT5

MLLHLIYGPTCSGKTDMAIQIAQETGWPVVALDRVQCCPQIATGSGRPLESELQSTRRIYL
DSRPLTEGILDAESAHRRLIFEVDWRKSEGLILEGGSISLLNCMAKSPFWRS GFQWHVKR
LRLGDSDAFLTRAKQ RVAEMFAIREDRPSLLEELAE LWNYPARPILEDIDGYRCAIRFARK
HDLAISQLPNIDAGRHVELIEAIA NEYLEHALSQRDFPQWPEDGAGQPVC PVTLTRIR

>IPTZ_AGRT7

MDLRLIFGPTCTGKTSTAVALAQQTGLPVLSLDRVQCCPQLSTGSGRPTVEELKGTSRLYL
DDRPLVKGIIAAKQAHERLMGEVYN YEAHGGLILEGGSISLLKCM AQSSYWSADFRWHII
RHELADEETFMNVAKARVKQMLRPAAGLSIIQELVDLWKEPRLRPILKEIDGYRYAMLFAS
QNQITS DMLLQLDADMEDKLIHGIAQEYLIHARRQE QKFPRVNAAAYDGFEGHPFGMY

>MIAA.RHIRD

MMKNLDQNFDAILITGPTASGKSALALRLARERNGVVINADSMQVYDTLRVLTARPSDHE

MEGVPHRLYGHVPAGSAYSTGEWLRDISGLLSDLRGEGRFPVIVGGTGLYFKALTGGLSD
MPAIPDDLREGLRARLIEEGA AKLHAELVSRDPSMAQMLQPGDGQRIVRALEVLEATGKSI
RDFQRASGPMIIDPERAQKFIVLPERPVLHDRINRRFEAMMDSGAVEEVQALLALNLAPDA
TAMKAIGVAQIADMLTGRMGAAEVIEKSAAATRQYAKRQMTWFRNQMGDDWTRIQP

>IPT_RHIAD

MDLRLIFGPTCTGKTSTAIALAQQTGQPVLSDRVQCCPQLSTGSGRPTVEELKGTTRLYL
DEQPLVKGIISAKQAHERLIAEVYNNEAHGGLILEGGSISLLKCMVQSSYWSNDFRWRIIR
HKLADEETFMKAAKARVKQMLHPAAGLSIIELVHLWNQPQLRPILEGIDGYRYAMLFAS
QNQITPDMILLQLGADMEDKLAHGIAQEYLIHARRQEQEFPSINAVAFEGFEGHPFGM

>IPT_DICDI

MKILLIIGSTGVGKTDLSINYSKKYNAPVVVLDRIQCFPELSITSGRPDESEYFGSKRIYLT
LLVEPGNENIKKTFYVNKLINILNEIKNNYDTQNL PNEKGYGCIFEGGSISLLKELLTKINKL
PYKITCVIYIRPSDSIDNHKLYKAKIFKRVSQMLFPTEEGNDSQILEVKRILNKGKTVNAQG
EINLEYEYKIKQVLISLVGLVGIEDVIHFLDKQYDQKNITSKLDPNYLNEIQSCLIETITLAH
YNYALSQIELIDSLIKQLPKSIEYCLKNIEIN

>MIAA_DICDIb

MTSPLVVVFLGTTGVGKSKLAIELAKQFNGEIISDSMQLYKDGGDITTNKV TIEEMEGIPH
HMMSFLPIDTLNYNVADFASKALGIIRDILSRGKLPIVVGGTHYYTCSLLWSDSIISLDDND
NNNDNNS ENKIIEEEEEII
DKNKYSYEILKEIDPIMAEKLHKNDIRKIKRSLDIYYTSGKKQSDLINDQHDKKSLRFRSCLLWLE
CKDQSILEYRLNKRVDNMIELGMLDEVFNIFKILNKSNTENFSKGLTQAIGIKELYDY YLFL
NENENTKIENENKEIDNDNENNNNNNNNNNNKIKKIEKLKIKKEKQREKLYKESIDS IKSHTK
RYAIRQIKWISKISPINTPLDILSLDSSNLDLWNDLVFIPSKNKVDQFINHLNLTGYKNKDST
NNDNNNNNNNNNNNNNNNNNDLNKWKYYCEHCSKELNGDNEWSFHQSKQHRHRLKK
RDTNNIDNKDKYNNNNKNNNNNNNIQKEKGEIETEK

>MIAA_DICDIc1

MKRFFGSGGIKMKDKVIIIAGGTGIGKSDLSLKLAKQINGEIIGADSVQIYKHLTIASNKVT
DTNGIPHLIDMLDLDDNNFCLFDYYRLAKNTIKDVLSRGRVPIVVGGCGFYLD TILKGSR
VDLTNDKERDEIKLYYNKIKQEDNWDYYYDLLKKYDIESANMILKNDFIRLSKSLYFNTV
KGVKFSTQKDDYQDSIANEYDFRTFYLSGDRSKMHITLNNRCESMFKMGILEEVYDLLKR
DKDLHFKNSKSSESIGYRQIMDLLLPVVRNIDDT SINMNQSLNAIDESDVISTILNFQTAN
RNY YRKQYSWFKKEKYFEWLNPIDNEITNQYIISLELPFDEWQNNRNLKKEEEIRTCSPK
DTKLISLYKPSKQLVSSILLNSNKLRLNSLIKS NPELFENDNNNNKYK

>MIAA_DICDIc2

MKRFFGSGGIKMKDKVIIIAGGTGIGKSDLSLKLAKQINGEIIGADSVQIYKHLTIASNKVT
DTNGIPHLIDMLDLDDNNFCLFDYYRLAKNTIKDVLSRGRVPIVVGGCGFYLD TILKGSR
VDLTNDKERDEIKLYYNKIKQEDNWDYYYDLLKKYDIESANMILKNDFIRLSKSLYFNTV
KGVKFSTQKDDYQDSIANEYDFRTFYLSGDRSKMHITLNNRCESMFKMGILEEVYDLLKR
DKDLHFKNSKSSESIGYRQIMDLLLPVVRNIDDT SINMNQSLNAIDESDVISTILNFQTAN
RNY YRKQYSWFKKEKYFEWLNPIDNEITNQYIISLELPFDEWQNNRNLKKEEEIRTCSPK
DTKLISLYKPSKQLVSSILLNSNKLRLNSLIKS NPELFENDNNNNKYK

>aVctIPT_I

MPATSLFELQLQPQYAPQQQQQQQPSLSPPPPPPPPPQQQQQQHTQDEHEQE AAAAAAT
ADNVPAEGSETAQR RPMVVIVTGPTAVGKTAISLMLATHLRQPTTTGHHNYQHQQEQQEQ

QQEQQQHQEQQQEQRHSDGNGAGYSATGIGCGAVDGAGGCSAAGGGGASSAGGEVIS
ADSVQVYKGLDVGSDKLPSPERRGIPHHLLDVREPHQDFSAGEFFECARPVMEDIINRGGV
PLVVGGTGLYLRLVVGKGGAPRATPEALKAVNEAIGAAWAEREAEKRAAAVAEATDAT
AAAAAAAAGTAEVAAPDPFCLGEEEEKWDAAAALLLKWGDDVAYDRIRAERNYYRL
ERALAILAMHPGAKLADFEPRAILDRELDLDFRCFFLHRPRLQLYDRIASRVEAMVVEGGL
LEEAAMLLRMGLAPGANMAAKAIGYRQAMEWLMAAKAADRPVGLPDLCALHAAICQA
THKLVRAQMTWFRDDPMYKWIDVEGRDPRDVVEEILQELAKPQHEAAAEEARGPAKKAK
SKSALAAEAAAAAAAAAAEAQLAPLLARINGELLPGIPEAAVAAGAASATATSAAVSGGVR
QEVGEVEE REAKRCRSGE

>alMptIPT_I

RVLVLGPTAVGKTSLSLDLASKLDGEIISADSVQVYRGLDVGSGKLAASERRGIAHHALD
VLDPSEDFNAGAFVDLALETVEDVVSRGKVPIVVGGTGMYLRWFVGGRPATPASTPESSR
AAKEEVRAAAAAAGWDGALKLLRDAGDPDTADRVATNDWYRVERALEILRASGRPLGS
YAPESPPPFDFRCVLLDAPRVQLYRRIDDRVECMVCDGMLDEAAMMMRRGIAPGSTSAA
SAIGYRQAMEFLAARAAAAAGGGGGGATTEEDLLAFVEKTQRATRAFAKRQLTWFRGEP
EGRYRWISASDGEEAAAREAMDAFERD

>alMptIPT_P

MPSPTPRPAASPLPGVVCVLGQTGAGKSRLGAELARAIDGEVVNADAMQLHDALPIATAR
TTSEQTLGVPHHLFGVVPVPVPTRGGESSASARDERGGGGYGVTVRDYRAMALPVVEGII
ARGKVPVLVGGSDYYARAIVSRSLDDQLGAGREGPGAEARGEDDGDARDDGASASEEE
EDGDDDDDDDDNVADAPPPSRVKPNENDAAAALARHARLREVDPVSAKLHPNNARKVR
RYLEIYDAFGEPASVVFARGKAAAAAADDDDDDESPSDTSARYRSLCLVLRADASELEPA
LARRVDAMVDAGLVAELEAAAAANVGGGVGVSQSIFHEWVEYLRARAATPQRDVDA
IDTMKADAIEAMKADTRRLARAQLRRCRKLERTFGWRPTYLDATATHAGARVGDAARA
DAAWREDVFEPALRAARAFVAGEDDGGGGGGGGVAEPAWEERRCDACERTLRGDAEW
RAHVSGRRHRKRVASLRKKREGKHGVPPREKGCSDAG

> PpIPT1

MVSLQFEVGP MYMLTHRAQACLCNCTGGLKLFRGVSSLPNGGICLPKFFSYQCANWGTI
GWNTSSVGDSSRDRVLC SKVGPRITL CDSYCAPNSKLGRVRS DGS LNNFVRAFVGETIAK
TAGAVGSGKESAMAEDNVEDTDVRGRKGRVVIAGPTGVGKSRLALALAKRLRGEIISAD
SVQVYRTL DVGSAKTPVDEREGIPHHLLIDIVDPSQDYTAGYFYDDARAATELVLTGKSVPI
VVGGTGMYLRWYMTGKVGAPKATKEVFVAVEEEVDRLIKEGGGWDDALRMLADAGDL
TTGPSLARNDWYRLRRALEIIKTSGQPRSAFSKLRNCDPDAATEGASWDYDFHCYFLYQP
RSELYQKVDLRCEQMAQEGLLDEASSLLDSGLQPNSNSASRSIGYQLAMEFLMECRQVE
GAATEERFFLFLEEFQRHSRNYVKRQLTWFRNKGQSEQMFNWIDATQPLEVMVDALAKE
YERPNEVVSDVLKAASVVTKESSYKEENLLKRYRTQNRIFTSNSEALKRTLQWIRDTQCL
WRNSSTVDDLQKRMESSTTSM

> PpIPT2

MSTTAVVHLHSAASAVTPLWSGAREPSAPEPAIVRPTVRCFNRSSGAARASFTGVDLGKCR
AWRRGLTTPFRCVATPERRASSVGKAVSQDASRLQFPFSSLDYPDFNRTAFVEPDVSVRHH
GDRSVVEKNPPSTKLVQAPRRSVKPRVILIAGPTAVGKTRLSIELAKTLGGEVINADSVQV
YQGLDVGAAKASLEERQGIPHHVMDLVPPTVEYSYEQFLRDARSATEHILAKGLVPIVVG
GTGMYMRWFMQNRAGITSHPFEDDLTGEFDARAEDDWDYDFQCYFLYQHRADLYPRV
DIRCEQMIPALLEEAALLNLGVRPQTNSASKAIGYEEAMELLLEARQADGVISQERFLKF

VALFQHNSKGLVRKQIAWFRTHSRSEVRKFRWLQAGGPVEEMMEALVEEYARAPGQPTLI
ASGEELKTRSMKEQKRMKSYKPTLKIYSDAAVAGCLAWIKSTQGPILSPARASGQCRQIL
ARLLGVGTAAVDSRRLAETAPVSGRFLKLGMCFTTLSRRFSGSFGKVQTSRLRNCVASGR
RDGGRQWNTHRCHILLQGRPVIATVLGMVPCSLEPLPQEVGIHVTGLHRLQFPSSNSVTH
VLNVWDFLYPTLEALCQCIREWIDDRMSTAHEYICTFPSCSERGFSVTERRGDLKVFRSYNQ
RRCDAQNHFFSELYNRALYTQITGVINNFISGIHTYISRRRRSVSRPLVDSFVGALQESHQK
KGQVHVLVREQILFTAMIHVRQVAMHRVIIRKSDIKDALEPCGSGPEGPDTRHRVSTSTKR
TQYRCRPCDSVLESSNQSNEADDLLNNLPILNLPILTSMLRPLALASDAGGCNHLVLRAAA
FPTIPQHMFGQERVIGVMTSSLRWFAESHCSGKRSTENKLRTS

>PpIPT3

MSSTAAAVVASSISSDSARHEQHELQQKPQAQRCEVQTAQRIASQTRDRDSTGLAPVAA
SPAAAVPVLAAAHESGREGQGMPPQLQRKWGVRGEPDKGKR DAGARHTVTYATAQESDR
GVDRGGLRDWVPKKKYSATCGLQEHHWEDRFSSVERGGAERMELVVVRKAVAVGENG
WSARLLTEAGGGASKLACLKFAGTLDKVDSRSSGKVTGLGTQKGRVVIAGPTAVGKSRV
AIDLAKQLGGEIISADSIQVYQGLNVGSAKTPLHEREGIPHHLVDIVPPTEEYSASQFCKDA
RDATKLVLDRGRVPIVVGGTCSYLWYMNKGKTGASYPSSQQVNAAIEGKIRRLVSHSRG
WEFAVHMLAQAGDPDTAYNLARNDWHRFGQALQAILVPIFSSPLYQSQFSWIRKHQPPTG
GTDLSVKIQVSGQSRGVFPSPHNYKLDHTDGSEWDCNYDFQCYFLYQQRAELYRWIDLR
CEHMLVDPRGLLQEAAWLLDIGVMPDTSSASRGIGYQEVGFTYHPDHSSIRAMEFLVDCR
RTGGNTTEERFLAFLSGFQHISRSLVKKQLKWFSDQHSQFHWIDASQPTDQILEALR
KEYWRRPGYPSELKGS DAMKEASYKEGKTLKHYKAKNRIFTDSTVISPVLRSCAKVTRL
TCQPPIGRSWPAGGWQAKEPVWPPCTKQNLHPCSDKTVSMQDTIQNKWNHAVDYFYDQ
MMQS

>PpIPT4

MANMIAKPKLSQYNLGPQELPISFCDCYVKLQHSFKRRRTHQSKQPRERHADRQTERAR
DICSFYLLRHPTKGFEEVRREYMWTQRAACPCLSSRRGELVVGINWQQQCKDFWDPKLV
MVDLQPNVLGMARAKVAVGNGGRQAGLLKEGETTATTTTTTRKIGCLEFAGRPDNDVRS
TTTMTGVETQKDRVIVAGPTGVGKSRFAINLAKQLGGEIISADSIQELLVDHNV DALCEGI
PAPLWRSFHVAYSFQVLICPHFALRGIFEVAGSSCLAEHCMQLNMSFCYLLEGDSSPDSPVV
AFETFHMNIASCLTELQVYNGMNVGSAKTPLHEREGVPHLLDIVPPTEGPYCIFLMVDSI
SRNVLLYFEVV TAKPKKYSASRFFKDARDATELV LARGRVPIVVGGTCTYMRRYMSGKA
LAPKATPEVSAVIEAEIRRLVSRPGDWEMAALRLTKASDPANAYSFARN DWYRLRRALEV
TMRMHVSGQPRRAF PKQHNYTVDHMDGLEWDSYDFQCYFFYQHRKELYHCIDLRCEQ
MIANPRGLLQEASWLLDLGLTPDSSSFSSRGIGYQETCVMILMANQAMEFLMECRKAGGR
STEERFLAFLSAFQHVSRSLVKKQLAWFRSNKHSDVKQFHWIDASQPTDKILEALRKEYW
RRPGYPSELSGSDDVKHAS YMEGKILRYEDFYEPIGNCNCFCGVGEADTRRPEFSTES

>PpIPT5

MWTQRAACPCLSSRSGESVAGGNLQQCKDLWTPKLG MVRRVELRQSKKL VVRACLAV
GDESRQTQFLKEGVETNTRNVKCLEFAGGPDNLDGSPTKAFSRGTQKGRVVVIAGPTAVG
KSRIAIALAKQLGGEIISADSIQVYKGMNVGSAKTPLIERQGVPHLLDMVCPTEEYSASR
FLEDARAATDRVLDRGRVPIIVGGTCTYLRFWMNGNAGAPKATSEVGATIDGDIRRLIGRP
GSWETAVHRLAQAGDLTTTNSLARNPTNANMLRRAIEV VTPWGAFHNLYTCMLNHMDG
SEWDYDYDFQCYFLYQHRAELYHWIDLRCEQMLADPRGLLQEASWLLDLGLMPDSSSAS
RGIGYQEKFSNMFLEDACCDSSILIAM EFLMECRKAGGMATEKRVLEFLSAFQHVSRSLV

KKQLTWFRSDQHSQFHWIDASQSTEKILEAMRKEYWRPPGYSELRGSDDRKHASY
KEGKVLKYYKVENRIFTNSAAIANVLKWKQTQVDRRFQQNVVRF

>PpIPT6

MAHSQSYKHTEFAPIGHKLSSIHIRNTPITEGHELQGGASLKSTGKSKSAAFSTSSLERKSM
LRESVTQHTGLLRVPSRKLRRQTSLVAAMCSSNNNNSTCAKCIQTSLSHLELFLQQNSRLR
SLVQCCHVSQSYCWYVVC DKIVKREK CERARGNKKDLQPSLRTAISVRYSRSEVDEGNNE
RKRWEEWWSCRERIGVESMVKKKVRLVVRANVTVEKSDKQVRLLTEAGGAAGTLGCLE
LSGRDLTRSNGKVTS LGTQRGRVVVIAGPTAVGKSRVAIALAKQLRGEIISADSIQVYKGM
NVGSAKTPLLREGVPHLLDMISPMEGTEYSASRFLKDARAATKMVLDSGHVPIVVG
TCTYLHWYMNGEARAPKPSPKSNAANKERIERLVDRPGDWEFAVHTLAQAGDPATAYSL
CRNDWPRLRRALEGILETQTVGWQSDQCMKVQISGQSGGVSTKPHNYTLDNMDIPEWD
YDYDFQCYFLYQNRAELYRWIDLRCEQMIAEPQGLLQEASWLLDLGLLPNTSSASRGIGY
QEAMEFLVECRGTGGITTEEKFLAFLSGFQHVSRLVKKQLRWFRSSHDSAVKQFHWIDA
SQPTDQILEALRAEYLRRPGYSELKGSNALIDASYKEGKTLKYYDAKNRIFTSSSTIAPVL
RWVKKQTQGDLRPIPRRFVTV

>ZmIPT1

MAHPSAAAAVSSTAPAA NPSSGAREEGGARSPSPSPSRGRAKVVIVMGATGAGKSRL
AVDLAAHFAGVEVVSADSMQLYRGLDVLTKAPLHEQNGVPHLLSVIDPSVEFTCRDFR
DRAVPIIQEIVDRGGLPVVVG GTNFYI QALVSPFLDDMAEEMQGCTLRDHIDDGLTDEDE
GNGFERLKEIDPVAAQRIHPNDHRKIKRYLELYATTGALPSDLFQGEAAKKWGRPSNSRLD
CCFLWVDADLQVLDSYVNKRVD CMMDGGLLDEVCSIYDADAVYTQGLRQAIGVREFDE
FFRAYLPRKESGEGSCASLLGMHDDQLKSLLDEAVSQLKANTRRLVRRQRRRLHRLSKDF
GWNLHRVDATEAFFCATDDSWQKKVVKPCVDVVRFLSDNSTVLPSTSASDPSSRELWT
QYVCEACGNRVLRGAHEWEQHRQGRGHRKRVQRLKQKSLRPWPSLLPQDRS

>ZmIPT2

MEHGAVAGKPKVVFVLGATATGKSKLAIALAERFNGEVINADKIQVHDGVPIITNKVTEEE
QGGVPHLLSVRHPDADFTAEEFRREAASAVARVLSAGRLPVVAGGSNTYIEALVEGDGA
AFRAAHDLLFVWVDAEQELLEWYAALRVDEMVARGLVSEARA AFGGAGVDYNHGVRR
AIGLPEMHAYLVAEREGVAGEAELAAMLERAVREIKDNTFRLARTQAEKIRRLSTLDGWD
VRRIDVTPVFARKADGTECHELTWKKQVWEPCEEMVRAFLEPSLTAVPGVAVTEEGNAGV
VATAAPAGDVVVPTGDVVTA VADA

>ZmIPT3a

MAAAAVAGIGSNDVPRKRLRRPSSVRIMERRSRGGSDGDCSCSSSGKELEPAEPTTRLVVI
VGATGTGKTKLSIDA AVALGGEVVNADKIQLYAGLDVTTNKVPHADRRGVPHLLGAVR
ADAGELPAPSYRALASAAAASVAARGRVPV VAGGSNSLVHALLADRLGDGDPFEADGGY
RPSLRFPCCLLWVDVDGAALDDYLD RRVD DMVREGMVEELREYFASTSPAERASHAAGL
GRAIGVPELGAHFAGRKTLAAAIDEIKVNTRVLAAAQVRKIRRMADAWGWPVRRLDATP
TIRARLAGAGCAAEEAAWERDVGGPGLAAMRQFLDCHEQQQQQRWPLVRRQCRGMAW

>ZmIPT3b

MAAAAVAGIVSNDAPRKRRPPSGVRMEAMSRGGGCCSSSDKKLEAAEPATTRLVVIV
GATGTGKTKLSIDA AVALGGEVVNADKIQLYAGLDVTTNKVPHADRRGVPHLLGAVRA
DAGELPAPSYRALAAEAAAASVAARGRVPV VAGGSNSLIHALLAADSLGAGDPFKVDDGY
RPSLRFPCCLLWVDVDGAVLDEYLD RRVD DMVREGMVEELREYFASAPPASHAAGLGKA
IGVPELGAHFAGRKSLAAAIDEIKANTRVLAAAQVRKIRRMAGAWGWPVRRLDATPTVR

ARLAGAGRAAEAAAWERDVRGPGLAAMRQFLDGHEQQERWPLARRQCRGMVV

>ZmIPT4

MSLYLAPATAAAATTTTTTLPRQLLPASIDLRRLERRGMALPLPPAPAPPPPLVSANNRHAG
AKHKAVVVMGATGTGKSRLAVDLALRFGGEVINSKIQHLHAGLDVTTNKVTEQERAGVP
HHLLGVARPDEEFTAADFRREATRAARAITARGRLPIVAGGSNSYVEELVDGDRAAFDRDY
DCCFLWVDVQRAVLHGCVARRVDEMRRARGLVDEVAAAFDPRRNDYSRGLWRAIGAPEL
DAYLRWPGPGVDGDAESEGERDRLLAAAIEDIKSNTRRLSCRQRAKIQRLAKMWGVRRV
DATEVFRRRGDEADEAWQRLVAAPCIDAVRSFLRTDDAAATVASDLAVDGVVPVFAPAPA
AAVAG

>ZmIPT5

MAAPAMAAPPPPPACFPMPTRLTMPPTSITLPDPPPLSVGGACRRVAAKHKAVVVLGATGT
GKSRLAIDLALRFGGEVINSKIQAHAGLDVATNKVGLAERGRVPHLLGVVHPDAEFTA
ADFRREASRAADRAAARGRVPVIAGGSNSYVEELVEGDRAAFDRDYECCLWVDAQLPV
LHGFVARRVDDMCRRGLVDEVAAAFDPRRTDYSRGIWRAIGVPELDAYLRARGRGHGH
HDQMLAAALHEIKANTSRLAVRQRGKIQRLERMWRVRRVDATEVFLKRGLAADEAWQR
LVAAPCIDAVRSFLLEDQQEYSSMGTAGAMLPAAVAAAAV

>ZmIPT6

MAAAPACSPMAARLTMPPLPDAAAPLSVVGCRVAAKHKAVVVLGATGTGKSRLAIDL
ALRFGGEVINSKIQAYAGLDVATNKVGPAERAAPVPHLLGVVHPDAEFTAADFRREAAG
AAARVASRGRVPIIAGGSNSYVEELVEGDRAAFRERYDCCFLWVDARLPVLHGFVARRVD
EMCRRGLVDEVAAAFDPRRTDYSRGIWRAIGVPEMDAYLRAGGHGDGDGEQEQRARM
LAAALDEIKVNTSRLALRQRGKIQRLEARMWRVRRVDATEVFLKRGHAADEAWQRLVAAP
CIDAVRSFLLEEQEYSSSMVTASMFASAAAAV

>ZmIPT7

MAGVNGATASGGDNKAKVVLVMGATATGKSKLAIDLALRFGGEVNSDKIQVHDGLDV
VTNKVTAAERQGVPHHLIDGVADADYTTADFCRDAVRVESILRGRVPIIAGGSNRYLE
ALLDGEPPAGFRGRYECCFLWVDSDLAVLDYIGSRVDCMLEQGLVREVRFAFRHDDAD
YSRGIRRAIGVPEMDMYFRMEAAGALDGDDDDQLRVRLAAAVNEIKANTCGLARRQL
QKIHLRLHGLQGWSDIHRLDVTEVLQLKVGNAKNPKAQRDWETDVVSPAARIVGMFLA
VEGARDKDKDRFLLTTPKEVAVPGICTATADWFGQQLDMTVMSPSKGFAGLGSAAAAV

>ZmIPT8

MAAAVAGARRPLHRTLHPPPPPEEDEHQQQRACRSRGSSSSCSASSSSTPARPRGTGMV
VIVGATGTGKTKLSIDAAEAVGGEVVDNADKIQLYAGLDVTTNKVAPADRRGVPHLLGAI
RPEAGELPPSTFRSLAAATAASIAARGRLPVVAGGSNSLIHALLADRLDAGAADPFSAPPQP
APPRWGRRPALRSPCCLLWVHVDAALLAEYLDRRVDDMVRGGMVEELREYFAATTAAE
RAAHAAGLGRAIGVPELGACFAGRASFRAAIDDIKANTRDLAAAQVRKIRRMADAWGW
PIQRLDASATVRARLRGAGPDAESACWERDVRAPGLAAIRSFLLELDGGSVVDGAVVEEV
EPRVRCCDVVG

>ZmIPT9

MLAPATAAVSAATATTTTLPRPPSSIDLRRLPLERGMALPLQPSLPPPLLLVSANNRHKAVV
MGATGTGKSRLAVDLALQFGGEVINSKIQHLHAGLEVTTNKVTEERAGVPHLLGVVHP
DVEFTAADFRREASRAAGAITARGRLPIIAGGSNSYVEELVDGDGRALREGYDCCFLWVD
VQPAVLHGYVARRVDEMCARGLVDEVAAAFDPRRTDYSRGIWRAIGAPELDAYLRWSGD
EGERARLLAAAIEDIKSNTRRLSCRQRAKIQRLAKLWGVRRVDATEVFRRRGDAADEAW

QRLVATPCIDAVRSFLRDAAVVAAANDPPAAEVVPVFAPASAAVVAG

>ZmIPT10

MSGEMRPQQLGAMRRAIWRSWPILCLQSQRHLLPSFCASTKAATMAASSLPPPTHKKK
DTVIVISGPTGAGKSRLALEVARRLGGEIISADSVQVYRGLDVGSAKPSAAEMSLVPHHLI
DILDTSDDYSGAFAFRDARRATQDVLDRGCVPIAGGTGLYLRWYIYGKPNVPQSSMEST
LAVWSELADFRENGQWEEAVELVVQAGDPRARDLSVNNWNRLSRSLEIIRSSGSPPSAFA
LPYDAFCEQHDTDLTEAPSSAGNYEAREMEYDFFCIFLASPRIELYRSIDLRCEEMLVDTGG
LLSEASWLLDIGLQPRMNSASSAIGYKQAMEYLLHCRQNGGESTPQEFLDLAKFQRTSR
NFAKRQLTWRNEKIYHWVDGSKPFEALVQFVCDAYHGCSARMVPESLEMKRENCVLKS
RDLKTYRSMNRVFLGGDDCSHVLNWIRRTQSK

>BrIPT1_1

MTELNFLPTISDHFTTTSTSLSFSSHSHFPFSVRMNDQSRPQNLKDKIVVILGATGAGKSRL
SVDIATRLPSEIINSDKIQLYKGLEITTNQITIPDRRGVPHHLLGYLPSEDGELTARGFRIAAS
NAVSDITSRKKLPPIAGGSNTLVHALLAERFDPKIDPFGSSSISRELRYNCCFIWVDVSETVL
FEYLLKRVDDMMGSGMFEELSRFYDPVKASTTRVGIRKAIGVPEFDGYFKMYPPEKEGE
WDSGRRAAYDKVVEEIKENTLRLAKRQVVKIEKL RDAGWDIKRVDATASFRAVLMGRRR
REWRGIWEEQVLEPSVKIVNRLLED

>BrIPT1_2

MTELNFLPTISDRFTTTSPSPSFSSHLLPFTHRRTRQSNHRPVSVRMEQSRPRNRKDKIVVI
LGATGAGKSRLSVDLATRFPSEIINSDKIQVYEGLEITTNQITFPDRRGVPHHLLGYLPSEDG
ELTAGDFRADASNAVSDIISRKKLPPIAGGSNSFVHALLAERFDPKIDPFASSICRDLRYDSC
FIWVDVSEPVLFYLLKRVDEMGMGSGMFEELSGFYDPVKASRARFGIRKAIGVPEFDGYF
KMYPPEKEIKWDSGRRAAYDKAVEDIKENT
LRLARRQVWKIEKLREAGWDIKRVDATASFRAVMMSSSSSREWREIWEEQVLEPSVKIVN
RLLED

>BrIPT2

MSVNPSNGGIDEAKKKKAKVVVIMGPTGSGKSKLAVDLASHFPVEIINADAMQIYSGLDV
LTNKVTVNEQKGVTHHLLGTVSPDLEFTAKDFRDSTIPLIEEILSRNHVPVLVGGTNYIQA
LVSKFLLED SKEDVDECCSNVAPGLDVESISGRDDL SHGYDLLKELDPVAANRVHPNNHR
KINQYLSLHASRGVLP SKLYQENAAENWGCIDASSRFDYCLICMDAETT VLDEYVGQRVD
SMVDAGLLDEVYDIYKPGADYTRGLRQSIGVREFENFLKTYLPDTNTSANDKALKENLR
KILDFPKDDKLRVMLEE AIDSVKLNTRRLRRQKRRINRLETVFGWNIHHVDATECLLGK
SEESWDVQVVKPATQILQSFLKTETELSHDSTLRKSMERDLWSQYVCEACGNKVLGRH
EWDHHTQGRVHRKRTARFKKAQNFENREKQEEEEVGICRETS

>BrIPT3_1

MIMRISMAMCKQPLAPSTALNFPPANFGPNMLTLSPSGPKDKVVVIMGATGTGKSRLSVDI
ATRFPAEIINSDKIQVHQGLDIVTNKITTEESCGVPHHLLGVLPPEADLTAVNFRHMANLSV
ESILSRGKLPPIVGGSNSYVEALVDDDEDYKFRSRYDCCFLWVDVALPVLHGVSNERVDKM
VANGMVEEVRDFDYSDSNYSRGIKKAIGVPEFDMFFRNEPFLNTGDREELLSKVVD EIK
RNTFGLACKQRNKIERLRKIKKWC IQRLDTPVFTRRRSKVDADVAWERLVAGPSTDAVS
RFLDFTSPQPLVEALTAVAREREMSRCLVV

>BrIPT3_2

MIMKISMAMCKQSLPPSTNLEFSPARFGPNMLTLNPYVPKEKVVVIMGATGTGKSRLSVD
LATRFQAEIINSDKIQVHQGLDIVTNKITTEERC VPHHLLSVLPPQADLTAANFCHMANLS

VESVLNRGKLPPIVGGSNSYVEALVDDDDYKFRSKYDCCFLWVDVALPVLNRFVSERVDK
MVQNGMVVEEARDFFDYSDSDYSRGIKKAIGVPEFDIFFRNEPFLNLGDREALLNKVVEI
KSNTFKLACRQREKIERLRKIKKWCIQRLDATPVITRRRSKVDADVAVWERLVARPSTEAVS
RFLLDIDSPRMFVEASTGAVREREMSLVA

>BrIPT5_1

MKPCMTNLRQMIQPMLNFQGISAGLNMVDVPFFRPKDKVVFVMGATGTGKSRLAIDLAT
RFPAEIVNSDK

IQVYKGLDIVTNKVTPEESLGVPHLLGTVENTHEDFTAEDYQREALRAVKSIVERDRVPII
AGGSNSYIEALVNNCVDLRLRYKCCFLWVDVDRPVLNSFVSDRVDKMMVEMGLVDEVRI
FDPSSSDYSSGIRRAIGVPELDEFLRAEKRDYPAEVTGKLLTAIKKIKENNCLLACRQYQK
IKRLYKQWKWNMHRVDATEVFLRRGEEADEAWESMVARPSALAVDRFLNYSDDHHLEG
ADILLPEISAVPPLPAVA AISR

>BrIPT5_2

MKPCMTALRQAIPLLNFKEISTGLNMVDVPFFRRKDKVVFVMGATGTGKSRLSIDLATR
FPAEIVNSDKIQVYKGLDIVTNKVTPEENLGVPHLLGTVENTHEDFTAEDFQQEAIRAVK
SIVERDRVPIIAGGSNSYIEALVNNCVDLRLRYNCCFLWVDVDPVLHSFVSDRVDKMMVE
MGLVDEVRIIDPTSDDYSTGIRRAIGVPELDEFLRAELLYPTSKLLETAIKKIKDSNCLL
ASRQYQKIQRLYKQWKWNMHRVDATEVFLRRGEEADDAWEDKVARPSALAVDRFLKYS
EDHHLEGADILLPEISVPPFPAVA AISR

>BrIPT7_1

MKFSISAMKQVQPILSFKNKLSMVNVNSFLRPQEKVVFVMGATGSGKSRLAIDLATRFQT
EIINSDKIQVYKGLDVLTNKVTPQECRGVPHLLGVFDSEAGNLTATDFCRLASQEISTLSA
NNKLPIVAGGSNSYIEALANHSSGFLNKYQCCFIWVDVSLPVLNSFVSKRVDMMMEAGL
LEEVRVHDPKADYSVGIRRAIGVPELHEYLCEYSLVDRGTQRKMLDAAVKKIKENTEIL
ACRQLLKIQRLSKKWKLSMHRVDATEVFLKRNEEEADEAWENLVARQTKRIVDKFCDNQ
VMKNDDVEHCLTSIGAASYGGGSGSRAHNMV

>BrIPT7_2

MKFSISAPKQVQPILSFKNKPSIVNVNSFLHPREKVVVFVMGATGSGKSRLAIDLATRFQTEI
NSDKIQVYKGLDVLTNKVTPQECRGVPHLLGVFDSEAGNLTATDFTLLASQEISTLSANN
KLPIVAGGSNSYIEALANHSSGFLNNYECCFIWVDVSLPVLNSFVSKRVDMMMEAGLLD
EVRQVYDPKADYSVGIRRAIGVPELHEYLRYESLVDRATQRKMLDVAVKKIKQNTAILAC
RQLQKIQRLSKKWKSCMHVDATEVFLKHNEEEADEAWENLVARPTKRIVDKFSNRHVM
KNDSVEHCLTTIGAASYGGGSGSRAHNM

>BrIPT8_1

MQALTSFFVSRSLVPTTPRRPRVRPLSVPPMTVCIDQSRNEKVVVIMGSTGTGKSRLSVDL
ATRFSAEIINSDKMQFYKGLEITTNQITIPERCGVPHLLGELPVDGPELTASEFRSLASGFIS
EMTSRGKLPPIAGGSNSFIHALLVEHFDPETNPFSKTLIPTELRYDCCFLWVDVSVSVLYHY
LSKRVDQMMESGMFEELADFYNSRDSRSTTRTGIHKSIGVPEFDRYFGVYPPEKNDKVCG
WDPARKVAYEEAVQEIKENTWRLSKKQIDRIMKLRSSGWEIHRLDATASFRAQSREAWDK
NVLEKSVKIVKRFVLEN

>BrIPT8_2

MQELTSTFVSRSLVPTTYTRPPQLRPKSIVPMTVCMDQSRKEKVVVIMGATGTGKSRLSV
GLAARFSGEIINSDKMQFYNGLEIATNQITIPERCGVAHHLLGELPVDDSELTASEFRSVASR
SISEISSRGKLPPIAGGSNSFVHALLVDRFDPVTNPFSKPSISSELRYDCFFLLVDVSASVLY

HYLSKRVDQMMESGMFEELASFYNPRNSRSTIRTGIHQAIGVPEFDRYFGVYPPEKSHNVF
EWDQARKAAEYEEVVHEIKDNTWRLAKKQIERIMMLRSSGWEIHRLDATASLRASSREVW
ENKVLRESVKNVKRFLKLD

>BrIPT9_1

MLSSSSVFLTARTCCLRLQPPCLILRRRLCGATACSVSLNGNTSNKKRNSEKEKVIVISGPT
GAGKSRLALELAKRLNGEIIADS SVQVYKGLDVGSAKPSASDRKEVPHHLIDILHPSQDYS
VGQFFEDGRQATKDILSRGRVPIVTGGTGLYLRFWFIYGKPDV PKPSPEIISEVHDILLDFQTD
HNWDAAVEFVVNAGDQKASSLARNDWYRLKRSLEILKSTGSPSSFRVPYDSFRENLNSP
DANDDFSENDISIQNIETDLDYDFLCFFLSSPRIDLRSIDFRCEDMLSGPNGVLSEARWLL
DLGLLPNTSSATRAIGYRQAMEYLSKCRQQGGVSSPGEFYWFLNKFQQVSRNFAKRQMT
WFRCEPMYHWNASKPLDTILEFIYDAYEKEAETLVVPDSIRMNKEMRNSREANALKAY
RPRNRHFVGREDCSSVLEWIRNEGCKSDVSCMEGAAI

>BrIPT9_2

MVIIHSGVALTRTCSSRLQPPCLVLRRRFSGAATTCVSLNGNSEKEKVIVISGPTGAGKSK
LALELAKRLNGEIIADS SVQVYKGLDVGSAKPSASDRKEVPHHLIDILHPSQDYSVGQFFE
DGRQATKDILSRGRVPIVTGGTGLYLRFWFIYGKPDLPKPSPEIVSEVHDMIDLDFQTDYNWD
GAVEFVVNAGDQKASSLPRNDWYRLRRSLEILKSTGSPSSFRVPYDSFRENLN SHDANN
DFDENGSSADISIQNIETDLDYDFLCFFLSSPRVDLYRSIDFRCEDMLSGANGVLTEARWLL
DLGLLPNTSSATRAIGYRQAMEYLSKCRQRGVSSPGEFYGFLNKFQQASRNFAKRQMT
WFRCEPMYHWNASRPLDTILEFIYDAYEKEGETLVVPDSL RMNKDLRNSREANALKGY
RPRNRHFVGREDCSSVLEWISSEGCKSEVSCVEGTTT

>SIIPT1

MRSFFHIIHCKNFKFLRNNLCPSYVSYNIATTTVAPLTTT KKIVVIMGATGSGKSKLSIDLAT
RGFNSEIINSDKIQVSKGLDITTNKISINEQSGVVHLLGEFSGPELFS P SDFRHTADNRITDII
NRRRLPLIVGGSNSFIYALLSNQFNPGVDVFDEINPVQCISKELRYHCCFILVDVLTPVLNRY
LFQRVDEMMNSGMYEELEEFFAKNGFSDRNTGIRKAIGVPEMEGYFRNLKNCTTVQEK C
RLYEAALREIKENTKELAEKQIRKIQRLRESGWDLQKVDATEALRAKMTPGNSKIPATEIW
ERQVVLPSMKIVKQFLLE

>SIIPT2

MRKLSFLSSANHSNTLFFF PKWTRNVVISATSSNPRLQRSKKIVVIMGATGCGKSKLSIEL
ATHFFPSIEVINSDKIQVYNGLDITTNKISMNERCGIVHLLGEFKSTESQPEFTPSDFRSAG
DFRINEIVNRGKIPFIVGGSNSFIYALLVKRFD SRF DIFESLNPVSEELRYQCCFIWVDAIAPV
LNQYLDKRVD EMLDSEMFEELKEYFEKEGFS DSGDGIRKAIGVPEFEKYFKGKISYEEAA
MEIKENTRVL AERQVKKIMRLREGGWNIQRVDATETLTAKMVSEKMAGGENPAGKIWEE
EVLKPSAKIVKQFLLE

>SIIPT3

MNIVLQHIAPFVTCKHQLLINFRDSL TIDPFIPPRRKDKVVIVMGATGTGKSRLSIDLAKQFS
AEVVNSDKMQIYEGLDIVTNKVTDKETCGIPHLLSIIDPNEVFTATDFCQRASKAVDSIIS
KGQLPIIAGGSNSYIKALVNDDIEFKSRYECCFLWIDVNLKILQKFVSERVDKMVKEGLVD
EAREFFNP DGYTSGIRRAIGVPEMHQYFINENNKMINENTRDKMLQIAIENIKVNTCKLA
CCQRQNILRLESQLEWKINRLDATEAFEKKDGEAHQAWNRIVYERSTQIVRHFRGEKLLNI
PPPPPPSSSTSFLHKVATMTH

>SIIPT4

MIGMMNSAQMCKQVRWQNLLQLQNFLQKDKVVVVVMGVTGAGKSKLSIDLATQFDGEII

NSDKIQVYKGLDIATNKITEEERCGVPHHCLGVIDPYKEFTTKNFCNMASTVNSITNRGK
LPIIVGGSNSFIEAFVHNSNSYNFSTRYDFCFLWVDASMNVLNSFLYERVDKMVDQGMVD
EVRQIFNPKNMDYTKGIRKAIGVPEFDSYFRAELSNSVDQRQTLERMLEEATEIKINNCILA
SKQLEKIKRLISVKGWKIHRLDASEVFKKQRIAEKEAEIWKNMVMGQSRKIVHKFLYE
NYRNSMVYKTDGTAIMAAASHY

>SIIPT5

MEIVEKLQNPNNNGGEIKLNPTSNSKPKVVVIMGATGSGKSKLAIDLASHFPIEINADSMQV
YQGLDVLTKNVTPQEQKGVPHHLLGTISPCVEFTAKDFRDSTISIINEIWLNRNLPVIVGGT
NYYIQALVSPFLDDSVEDAEANCLSDFQEDEKPDLEVELINEDYDCAYNRLKDIDPVAAN
RIHPNNGRKINQYLNLYARFGVIPSKLLQEKTEGRTGVKLIQDMIFASYA

>SIIPT6

MLLGADGILSEARWLLDVGLLPNSNSATRAIGYRQAMEYLLRCREDGGWSSAGDFHDFL
SEFQKESRNFQKMTWFRNEQIYEWIDASKPLEKVLSFICDSYNSQDGHLMPESLRMR
KDIRNHRQA AVLKTYRTINRHFHGHEDCVDVLDWIKKIYGQPTDSL

>OsIPT1

MEHCNGIAAVGRWLSTKPKVIFVLGATATGKSKLAIRLAARFDGEVINSDKIQAHGDFPVI
TNKVTDEERAGVAHLLGGVSPDADFTAEDFRREAAVAVARVHAAGRLPVVAGGSNIYVE
ALVAGGGGAFLAAYDCLFLWTDVAPDLLRWYTAARVDDMVRRGLVGEARAGFDAGAD
YTRGVRRRAIGLPEMHGYLLAEREGGAGAEDDDLLAGMLEAAVREIKDNTFRLTVSQVA
KIRRLSALPGWDVRRVDATAVVARMAEGAPHGETWREVWVWEPCEEMVSRFLETAAAAA
VVANGKVDVNVGDAAAGVPEAAAAAVVAAGVV

>OsIPT2

MEYHVGGVIGQSPKPKVVFLGATATGKSKLAISIAERFGGEVINSDKIQVHDGFPIITNKV
TEEERAGVPHHLLGVLHPDADFTAEDFRREAAAVARVLAAGRLPVVAGGSNTYVEALV
EGGGGAFFRAHDCLFLWTDVAPGLLRWYTAARVDDMVRRGLVGEARAGFVDGAGAAD
YYTRGVRRRAIGIPEMHGYLLAERSGGEAADDGELAAMLGDGAVREIKANTYRLAATQVAK
IRRLSALDGWDVRRVDATVVVARMAEGAPHRETWEAVVWKPCEEMVGRFLEASAAVDD
DDNAAAGSPAALAPMTAACRLRAQLVQLQY

>OsIPT3

MEGSRGDKGKVVVVMGATATGKSKLAIDLALRFGGEVINSDKIQVHDGLDVVTNKVTDE
ERAGVPHHLIGGVPPDADYGVDDFRDDAARAVASVLAGRVPVIAGGSNRYLEALLDGE
GGSFRERHELCLFLWVDSRAPALHRYVRHRVDRMVEQGLVGEVRGLFRLDDADYSRGIRR
SIGVPEMDAYLRQEATGALLTHGDKYKVALLASAVGEIKANTWSLARRQLRKIHRRLGLP
GWSLRRLDVTRVLELKVEARSEAECAAWEADVIPAAREVGMFLHGGGNVVESGREE
QPVVVEKMEVAAGGAGAAAAAEKWCGRRLLETTAAYHGMEAAAAV

>OsIPT4

MQAYMAVAAAPAPPASLTLLPRTTTVIRDRERFDAAVPVAPLVLRHGAGVKHKAVVVMGA
TGTGKSRLAVDLALRFGGEVINSKMQIHSGLDVVTNKVTEEECAGVPHHLISVARPDDE
FTAADFRREAAAAAGAVRGRLLPIIAGGSNSYVEELVEGDGRAFRERYECCFLWVDVDL
EVLRGFVARRVDEMCRRLVREVAFAFDPRRTDYSRGIWRAIGVPELDAYLRSRGDGADE
EERARMLAAVAEIKLNTFRLACRQHRKIERLDRMWRARRVDATEVFRRRGHAADDAW
QRLVAAPCIDAVRSFLFEDQERSIAAGKPPLFAAGKATSGNISVFASAAAAAMAAAAAI

>OsIPT5

MATSLSLAPKPAVAVAAAAIPRLVPPPSIDMSALSPPPPLVSVSRSMVAKHKAVVVMGATG

TGKTRLAVDLALQFGGEVINADKLQLHRGLDVATNKATADERAGVPHHLIGVAHPDEEFT
AADFRRAASRAAAVAARGALPIIAGGSNSYIEELVDGDRRAFRDRYDCCFLWVDVQLPV
LHGFVGRVDDMCGRGMVAEIEAAFDPDRTDYSRGVWRAIGVPELDAYLRSCAAAGGEE
ERARLLANAIEDIKANTRWLSCRQRAKIVRLDRLWRIRRVDATEAFRRRGGAANEAWERH
VAAPSIDTVRSFLHGEFTTAAETTAAPVPPPPFLPMFALAAAGAGV

>OsIPT6

MLNFHPSCDCFLNMLGNKLVVIIGATGTGKTRLSIEIAKAIGGEVVNADKMQUIYDGLDITT
NKVSLQDRCGISHHLIASIPRNAGDFVPSFFRSAAKTTINCIARRGHTPIVVGGSNSLIHGLL
VDNFDSSIVDPFGQLEVSYPRTPRSQCCFLWVHVNEVILNEYLKHRVDDMVDAGLVEEIE
EYFDTLNVNGHVPYVGLGKTIGVPELSEYFTGRVSCSDALSMKTNTQILARSQVTKIHR
MVDVWGWVHALDCTETILAHLTGSNKYMEDLVWKRVDSDPGLATIQDFL

>OsIPT7

MTSVATRIATLVRAAAAASRPLRLHRRPGGEDTRMVVIVGATGTGKTKLSIDAAKVIGGE
VVNADKIQLYDGLDVTTNKVSLADRRGVPHLLGAIRPEAGELPPSSFRSLAAATAASIAA
RRLVPVIAGGSNSLIHALLADHFDASAGDPFSPAAAFRHYRPALRFPCCLLWVHVDEALLD
EYLDRRVDDMVDAGMVEELREYFATTAAERAHSGLGKAIGVPELGDYFAGRKTFSEAI
DDIKANTRVLAQAQVSKIRRMADVGWPIHRLDASDTRARLTRAGSAAESASWERDVR
GPGLATIRSFLADQSPPPRSEGTNDYLYAMETEPEPPPPPTLPPRLRLPRMQYCDMVG

>OsIPT8

MERSRVGDGCCCSCSGRGGVASTTAVRPSTGMVVIVGATGTGKTKLSIDAAQELAGEVVN
ADKIQLYDGLDVTTNKVSLADRRGVPHLLGAIRAEAGELPPSSFRSLAAAAAAGIASRG
RVPVAVAGGSNSLIHALLADPIDAAPRDPFADADVGYRPALRFPCCLLWVDVDDDLDEYL
DRRVDDMVGEGMVEELEEFATTSASERASHAGLGKAIGVPELGDYFAGRKSLDAAIDEI
KANTRVLAARQVGKIRRMADVWGWPIRRLDATATIRARLSGAGRAAEAAAWERDVRGP
GLAAMRQFVGRADFNAAVDQLAARSRRQCLRGGMVAG

>OsIPT9

MAHLAASAAPLPSADPDAGEESSHSPPPPEKGLRKVVVVMGATGAGKSRLAVDLASHFA
GVEVVSADSMQVYGGLDVLTNKVPLHEQKGVPHLLSVIDPSVEFTCRDFRDHAVPIIEGI
LDRGGLPVIVGGTNFYIQAQVSPFLFDDMAQDIEGLTLNDHLDEIGLDNDDEAGLYEHLKK
IDPVAQAQRIHPNNHRKIKRYLELYESTGALPSDLFQGGQATEKWGRPSNSRFDCCFLWLAD
LHVLDRYVNERVDCMIDDGLLDEVCNIDREATYTQGLRQAIGVHEFDEFRRFYFARKET
GEIKMDSCTTMAGLHDDNLKGLLDEAVSQLKANTRRLVRRQRRRLHRLNKYFEWNLRHI
DATEAFYGATADSWNMKVVKPCVDIVRDFLSDDTILASRDGSSVTGSPRMSSRELWTQY
VCEACDNRVLRGTHEWEQHKQGRCHRKRVRQLKQKASTVISL

>OsIPT10

MQYGCRRAVWKRSPAAAAATKNKVIVISGPTGAGKTRLALDLAKRLSGEISADSVQ
VYRGLDVGSAPSSSDRAAVPHHLIDILHASDDYSAGDFFHDARAATDHLLARARVPIVA
GGTGLYLRWYIYGKPSVPQSSMDVTSVWSELSRFRDTGRWEEAVDLVANAGDPKARDL
SVNNWSRLRRSLEIIRSSGSPPSAFSLPYNAYNLNHHRRRLSLTNQADQPTELELDYDFLCIF
LACPRVELYRSIDLRCEEMLADTGGLLSEASWLLDIGLSPGMNSATCAIGYRQAMEYLLQ
CRHNGGSSSPQEFLEFLTKFQTASRNFSKRQMTWFRNEKIYQVVDASQPFDAIAQFICDAY
HDRAARLVPSLEMKRESRHSRDLKTYRSENRVFRGDDDCCHVLDWITRTQRK

>PtIPT2

MESDSAEEEEALQNPSNTDGGKELTVTKKEEKEEKPKLVVIMGPTGSGKSKLAIDLAAHFP
VEIINADSMQVYRGLDVLTNKVPISDQEGVPHHLLGTLNPNVEFTAKDFRDSAIPVLSIGK
CRYLLKCCVVFQFIMVFIIATNNAINGFMLINEILSRNCLPVVVGGTNYIYQALVSPFLDD
TTNDLDESLLNHPSGDEQTDHATDSGRESFNHSYDYLRELDPAANRLHPNNHRKINQYL
NLYARSGILPSKLYQGKAAEIFYTRIELCNYFEAVVILEKRMFWQNWGCMDNYRFHCCFIC
VDADIPVLDRYVEQVRVDSMIDAGLLGEVCEVYNYNADYTRGLRQAIGVREFDNFLRVYM
SDEKGHDSMGSFLQSKNEDVKLLKDNMREILHSSDDNQLKILLAEADKVKANTRRLVR
VQKRRLTRLQTFFGWNIHYVDATEFISCKSDELWAGQVVSANVIRAFLEERCAPDLE
THVGGGMKSVERNLTQYICKACGNRVLRGAEHEWEQHKQGRGHRKRISRLRKSQGHYS
SLVEQEVISNSS

>PtIPT3

MMNLCKSLCPQTSRMLDIPPGMLKMDMLSPRSRQKEKVIVIMGPTGTGKSRLSIELATQF
PAEINSDKMQVYKGLDIVTNKVAEEEEKSGVPHHLLGIANPTVDFTATNYCHTASLAVESIS
TRGLLPPIVGGSNSYIEALMDDEDLRLRLNYDCCFLWVDVSMPLVHKFVSRRVEQMVSVG
MIDEVRNIFDPYADYSTGIRRSIGVPEFDKYFRAEAFLEENRARLLHEAICHVKKNTCKL
ACRQWEKINRLRKIKGWDIHRLDATFVQKSGKEAEHAWEMLVARPSTAIVGQLLCGVPA
DKVPAIASVAKNMGYIRQCLVA

>PtIPT5a

MTMRLSLSAYKQVQPRVNFQGGNLMKPFRRKDKVVFVLGPTGTGKSRLAIDLATHFPA
EVVNCDKMQVYKGLDIVTNKVTEEEECRGVPHHLLGIADPNADFTSDDFRHHASLVVESIV
TRDRLPIIAGGSNSYIEALANDDPEFRLRYECCFLWVDVSLPLLHSFVSDRVDVMVRAGLI
DEVVDVFDPTKFDDYSQGIKRAIGVPELDQFLRNETIVDAKTRRKLLDEAIEKIKENTCML
ARRQLQKIRRLHSIWNWKMHRIDATPVFLASGKEADNLWDQIVAGPSTMIVNQFLCEENH
VSPIVPSESINMVPISVPAMAAVASR

>PtIPT5b

MTMRLSLTAYKQVQPRGNFQGGNLMKPFRRKDKVVFVVGPTGTGKSRLAIDLATRFPA
EVVNCDKMQVYKGLDIVTNKVTEEEECRGVPHHLLGIADPNANFTSDDFRHHASLVVESIV
TRDRLPIIAGGSNSYIEALANDDPEFRLRYECCFLWVDVSLPILYSFVSERVDVMVEAGLID
EVRDMFDPNKFDDYSQGIKRAIGVPELDHFLRNEAIVDAKTRRKLLDEAIDKIKENTCML
ASRQLQKIHRRLHSIWNWNVHRIDATPVFLTSGKEVDNLWDKLVAGPSTMIVNQFLCDKNY
ASPIIPSESIKMEPISVPALAVGATR

>PtIPT6a

MKIPFPKSTNQPLYTALKTQPLHPINISIPFNKPRPPPIAVRMDTDSSTTTSTAVYRHKKDKIL
VIMGATGCGKTRVSIDLATRFQSEIINSDKMQVYEGLDITTNKITIQDRLGVPHHLLGEFDP
DDGELTPSEYRLAGGLAISGIVSRQNLPIVVGGSNSLIHALVVDRFNPELNVFDGCPNVSTQ
LRYNCCFLWVDVSLPVLCDYLCKRVDEMLEDGMLDELSEYYGSVDAASQIGLRKAIGVP
EFDRYFKKYPPGSGCGRGIGVEWDRVRRGVYEVVREIKENTCQLAKRQIGKILRLKGAG
WDLKRVDATESFREVMVTVSDDHIKKRKKKRWMEVWGRDVMEPSMKIVKRFLEE

>PtIPT6b

MVTDSSTAASAGVHHHKKDKILVIMGATGCGKTKVSIDLATRFHSEIINSDKIQVYKGLDII
TNKIPVQDRLGVPHYLLGEFDPEDGELTSEFRLAGGLAISGIVSRQRLPIVVGGSNSLVHA
LVVDRFNPELNVFDGSPNVSTQLRYNCCFLWVDVSLPVLCDYLCMRVDEMLEDGMLFDEL
SEYYGSIDSASQTVLRKAIGGHWWGVGSGTERNIRGVREGDKGEHVSAGKEADWKDLEI
KRCRVGPAKSGCYGEL

>PtIPT7a

MEMIPLQPKLASSMRTMPMAASLPLRMEREIRHRNNLQQITSSLYSIDDKKKQKALFVMG
TTATGKSKLSIDLATHFQGEIINSDKIQVYKGLDMLTNKISEIERRGVPHHLLGFVEPGEEFT
TQDFCNHVHKAMKHITGDGSIPIIAGGSNRYIEALVEDPLFNFKDSYDTCFLWVDVALPILF
DRAAKRVDEMMLDAGLVEEVVRGMFIPGIDHNSGIWRAIGIAEMEPYFQAEMEMADEVTMK
ILLETGIKEMKENTKKLINKQLTKIKYLANKKGWKFHRIDATCVYERSAKVDEDVWDKK
VLRPSLEIVTNFLREDEKAEEVADSFLVTS

>PtIPT7b

MGTTATGKSKLSIDLATHFQGEIINSDKIQVYKGLDILTNKVSEDES RGVPHHLLGFVEPGE
EFTTQDFCNHVHMAMRHIIGNGNIPPIIAGGSNRYIEALVEDPLFKDNYDTCFLWVDVALPIL
FVRAAKRVDKMLDAGLVDEVVRGMFIPGIDHNSGIWRAIGIPELEPYFQAEMEMADEVTRK
MLLDTGIKEMKENTKKLINKQLRKIKYLANEKGWKLHRIDATFVYERSGNVDEDVWDD
KVLPSLEMLTNFLQEDGKAEEFVDASGLPGSFEWREKGVVTDVKIQGACGSCWAFSTT
GSVEGANFIATRKLNLSEQQLVDCDSVTDKTS CGDGC GGGFMTNAYRCLIEAGALQEET
GLNAILMQTCIRGVSCP VIRGKKWLNRGVLLVGN GARGYSILN

>PtIPT9

MSREQKKGKQEKGGSDVAVKV VVAVKASKEIPKTALVWALTHVVQPGDCITLLVVVPSH
APGRRLWGFPRFAADCANGHRKSHSGATSDQRCDITDSCSQMILQLHDVYDPNKINVKIK
IVSGSPCGAVSAEAKKAQANWVVLDKQLKHEEKRCMEELQCNIVVMKRSQAKVLRNL
VGTSKEPEVVGPSPSKLNEASEQH SKNKNSSGSIRGPVVTPTSSPELGTPFTVTEAGTSSV
SSDPGASPF FISETNGELKKEEPLVIKENRDLDESSD TDTEHL SLASSLRFEPWVGELLGSH
IKSSRHVEESSQRSNCMAQTSTTEALLEKFSKLD RQTGIGMSNYRTDLDSVNVRE AISLS
RNTPPGPPPLCSICQHKAPVFGKPPRWFSYAELELATGGFSQANFLAEGGFGSVHRGVLPD
GQAVAVKQHKLASSQGDVEFCSEVEVLSCAQHRNVVMLIGFCIEDRRRLLVY EYICNGSL
DSHLYGHHREPLEWSARQKIAVGAARGRLRYLHEECRVGCIVHRDMRPNNILITHDFEPLV
GDFGLARWQPDGDTGVETR VIGTFGYLAPEYAETGQITEKADVYSFGVVLEVELVTGRKAV
DLNRPKGQQCLTEWARPLLEEYAIVELIDPQLGNHYSEQEVYCM LHAASICIRRDPHSRPR
MSQVLRILEGDMHVD TNYMSAPGYDVGNRSGRIYIDRTAAAAAAIKTLWCSAVNE