Table S2 Amino acid sequence of the identified homologous proteins (matched peptides derived from *Phytophthora infestans* shown in **Bold Red**)

|  |  |  |
| --- | --- | --- |
| No. | NCBIaccession no. | Matched peptides (**BOLD RED**) |
| **S1** | **PITG\_12377** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MWTYRGDPYV | PTFVVEIDEL | SGPGSQLSAL | DRKMRNEYFQ | HGVQLGWLID  |
| 51 | PRPD**LQRMYE** | **YYLDDN**GDVQ | CSDNSVWRDL | DGGDVLPGFK | MRAPVLEMVL  |
| 101 | NQDSGSSSED | EVDLLCPSPR | CNKRF**RSYGA** | **CAAHVEW**HRK | ERSISKYLAK  |
| 151 | RENS |  |  |  |  |

 |
| **S2** | **PITG\_03552** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MSGRGKGGKG | LGKGGAKRHR | KVLRDNIQGI | TKPAIRRLAR | RGGVKRISGL  |
| 51 | IYEE**TRGVLK** | **VFLENVIR**DS | VTYTEHARRK | TVTAMDVVYA | LKRQGRTLYG  |
| 101 | FGG |  |  |  |  |

 |
| **S3** | PITG\_07996 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  1 |  MREVISIHLG |  QGGIQVGNAC |  WELYCLEHGI |  QPDGQMPSDK |  TIGGGDDAFN  |
|  51 |  TFFSETGAGK |  HVPRAVFVDL |  EPSVCDEVRT |  GTYRQLYHPE |  QIISGKEDAA  |
|  101 |  NNYARGHYTI |  GKEIVDLVLD |  RIRKLADNCT |  GLQGFLVFNA |  VGGGTGSGLG  |
|  151 |  ALLLERLSVD |  YGRKSKLGFT |  IYPSPQVSTA |  VVEPYNSVLS |  THSLLEHTDV  |
|  201 |  AVMLDNEAIY |  DICRRSLDIE |  RPTYTNLNR**L** |  **IAQVISSLTA** |  **SLR**FDGALNV  |
|  251 |  DVTEFQTNLV |  PYPRIHFMLS |  SYAPVISAEK |  AYHEQLSVAE |  ITNSAFEPAS  |
|  301 |  MMAKCDPRHG |  KYMAACLMYR |  GDVVPKDVNA |  AVATIKTKRT |  IQFVDWCPTG  |
|  351 |  FKCGINYQPP |  TVVPGGDLAR |  VQRAVCMISN |  TSAIAEVFSR |  IDHKFDLMYA  |
|  401 |  KRAFVHWYVG |  EGMEEGEFSE |  AREDLAALEK |  DYEEVSAETA |  EGEGEEEELG  |

 |
| **S4** | **PITG\_06415** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MSAAEAETFA | FSADINQLLS | LIINTFYSNK | DIFL**RELISN** | **ASDALD**KIRY  |
| 51 | SSLTDASVLD | TDKNLEIKVT | PDKANGTLTI | QDSGIGMTKA | DLINNLGTIA  |
| 101 | KSGTKAFMEA | LAAGADISMI | GQFGVGFYSA | YLVADKVVVH | SKHNDDEQYV |
| 151 | WESAAGGSFT | VTPDTSEPIQ | RGTRIVLKLK | ED**MLEYLEER** | **KLK**DLVKKHS  |
| 201 | EFIGFPIKLY | VEKTEEKEVT | DDEEEEDEKE | GEDDKPKVEE | VEEEEGEKKK  |
| 251 | KTKKIKEVTH | EWDHLNSQKP | IWMRKPEDVT |  HEEYASFYKS |  LTNDWEEHAG  |
| 301 | VKHFSVEGQL | EFKACLFTPK | RAPFDMFEGG |  AKKKVNNIKL |  YVRRVFIMDN  |
| 351 | CEELMPEYLS | FVKGVVDSED | LPLNISRETL | QQNKILRVIK | KNLVKKCLEM  |
| 401 | FAELAEDNEK | YNKFYESFSK | NLKLGI**HEDS** | **TNRTKIAKL**L | RYHSTKSGEE  |
| 451 | VTSLDDYISR | MPESQPGIYY | VTGESKKSVE |  NSPFIEKLKK |  KGYEVLFMVE  |
| 501 | AIDEYAVQQL | KEYEGKKLIC | ATKEGLKMEE |  TEDEKKSFEE |  AKAATEGLCK  |
| 551 | LMKEVLDDKV | EKVEISNRIV | ESPCVLVTGE | YGWSANMERI | MKAQALRDSS  |
| 601 | TSAYMSSKKT | MEINPLHPII | KSLREKAEAD | KSDKTVKDLI | WLLYDTSLLT  |
| 651 | SGFSLDEPTT | FANRIHRLIK | LGLSIDDDDD | AADESMEDLP | PLEGEDEEES  |
| 701 | TMEEVD |  |  |  |  |

 |
| PITG\_19017 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MDRDSLVFLA | K**LAEQAERYD** | **EMVDH**MKAVA | NNHNVELTVE | ERNLLSVAYK  |
| 51 | NVIGSRRASW | RVISSIENKG | DSERS**EHIKA** | **YRQKIEGELV** | **DICNDILTI**I  |
| 101 | ENNLIPNSSS | EEGKVFYYKM | KGDYHRYLAE | FQVDDERKES | SDKALESYKQ  |
| 151 | ASTIAMAELP | PTHPIRLGLA | LNFSVFYYEI | LNSPDRACNL | AKQAFDDAIA  |
| 201 | ELDTLSEESY |  KDSTLIMQLL |  RDNLTLWTSD |  QEPDNADANQ |  GDMNVQDVE  |

 |
| PITG\_06514 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MADQLTEEQI | AEFKEAFSLF | DKDGDGTITT | KELGTVMR**SL** | **GQNPTEAELQ**  |
| 51 | DMINEVDADG | NGTIDFPEFL | TMMARKMKDT | DSEEEILEAF | KVFDKDGNGF  |
| 101 | ISAAELRHIM | TNLGEKLTDE | EVDEMIREAD |  IDGDGQINYE |  EFVKMMMSK |

 |
| **S5** | PITG\_02786 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MGLLDIVQPG | VLNGEDVVKV | YKYAQEHNFA | IPAVNVTSSS | TVNAALQAAR  |
| 51 | DIK**SPIIIQT** | **SNGGAAFYAG** | **K**GIDNKNQNG | SILGAIAAAY | HVRAMAKHYG |
| 101 | VPVILHSDHC | AKKLLPWYDG | MLEADEKYFA | EHGVPLWSSH | MLDLSEEPME |
| 151 | ENVAISKKYF | ERMAKMNLIL | EVELGITGGE | EDGVDNSDVD | NASLYSQPED |
| 201 | ILLAYNELGS | VSPYFTIAAA | FGNVHGVYKP | GNVK**LHPEIL** | **GDFQK**YVAKE |
| 251 | KSLSTEKPVF | FVFHGGSGST | PQEIQTAVGN | GVVKMNIDTD | TQWAYWNGLR |
| 301 | **KFYEEK**K**DYL** | **QGQIGNPDGP** | **DAPNK**KYYDP | RVWVR**KSEET** | **MIARLHEAFR** |
| 351 | DLNCVNVL |  |  |  |  |

 |
| PITG\_03551 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MARTKQTARK | STGGKAPRKQ | LATKAAR**KSA** | **PATGGVK**KPH | RYRP**GTVALR** |
| 51 | **EIR**RYQKSTE | LLIRKLPFQR | LVREIAQDFK | TDLRFQGSAV | LALQEAAEAY  |
| 101 | LVGLFEDTNL |  |

 |
| PITG\_15492 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MAPKIRHAAP | AFTADAVVDG | EFKTVSLSDY | KGKYVVLFFY | PMDFTFVCPT  |
| 51 | EIIAFSEKAA | EFRKLGCEVL | GCSVDSKFSH | LAWINTPRKQ | GGLGELDIPL  |
| 101 | LADFNKEISQ | AYDVLIDVGE | ETGATFRGLF | IIDGEGKLR**Q** | **STINDCPVGR**  |
| 151 | NVDEILRLVE | AFQFTDEHGE | VCPAGWKKGK | KTIKPTVDAS | KEYFEAAN |

 |
| **S6** | **PITG\_11795** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MSKYSKTYLA | LAPVADPTAR | EHLLHAAAPA | IDAGTPINDD | FLLSARIERQ  |
| 51 | LREIEAQRGM | VTRHEVLAAT | IREHAILMEH | AEVEYPKAVA | PTVMPSAQLI  |
| 101 | PNSIYKPSYA | QVTHCIPSQR | HFSSSAVEAE | LQSVKWPSDL | AKRVHRRMRS  |
| 151 | FPRNYEAKEL | VVEAGMNQAE | WAIAAASFRK | SFLSEPSKYF | KNQQE**LLAFG**  |
| 201 | **RDLDDVK**RHN | SFIFYPYFVD | YAKANSYLPT | DQDNDNVLSL | QQLTDLRLPH  |
| 251 | EMYPFATAMK | RKIIYHEGPT | NSGKTHQALE | RLKQAGEDGG |  IYCGPLRLLA  |
| 301 | LEIFERLNAD | GLYTSLVTGQ | EKKLVPYSTH | VSCTVEMANI |  NRPWDVAVVD  |
| 351 | EIQLIGDPQR | GWAWTRALFG | LQANEIHVCG | SGEAVHLVKK | FAETTGDDFE  |
| 401 | LRSYERRSPL | EIAPTHLASY | SHIRSGDCVV | AFSRRDIFQI | KRDIEVKTGQ  |
| 451 | KCCIIYGQLP | PETRSQQARL | FNDRNNDFNI | LVASDAIGMG | LNLNIRRVVF  |
| 501 | ATVK**KYSGSS** | **GGMID**IPPSL | AKQIAGRAGR | YGSDFASGEA |  TCVLEEDLEY  |
| 551 | LKESYDEVPT | PLTSAGLFPS | SEQMEEFARQ | LPGITDLADL |  VDKYVMLARL  |
| 601 | DGDYFMCNHQ | DMKDAATLLR | ETELTLSDRF | TFCMSPVGLR | NPLARRVFLE  |
| 651 | YARAHSLGQS | VRLDIYLPKY | APRTAEALGD | VEIKAKIIDL | YLWLSFRFED  |
| 701 | TFVEKDLALE | LKTRVLELVE | QGLVNTTYHR | EDK**KTRWSSG** | **AANGRRSASR**  |
| 751 | **GQF**DGDRFRQ | QTKDGDSRPN | WRRDKTTRQP | AQASRRTNTQ |  REDGAEGLKE  |
| 801 | TEDSNMSWVA | RMFGTSK |  |  |  |

 |
| **S7** | **PITG\_00319** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MAMSFIWSLV | HACREGMLCY | SWLMSKVDEQ | FLNEGACALA | KRM**VDAWPFE**  |
| 51 | **RLPGF**GEGFD | LDWTHLYCAR | SECWYHDSLI | NALMMTLAEN | FKNNTTLFLP  |
| 101 | PLYTPAPSKC | KRIPPRTLSL | VAAADKDLVF | MPLNINGKHW | VCLVLDRPRT  |
| 151 | TIYCYDSFDK | RSNQIMLAEL | AEEIGRKALS | DSDNCGLFII | LHFW**RRFVKE**  |
| 201 | **MGSDYT**TVGL | LRRRWDVLRT | VVDFSDASKG | EQD |  |

 |
| **S8** | PITG\_05757 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MGRIARLELE | NFKSYGGYHV | VGPFHRFTAV | IGPNGSGKSN | LMDAISFVLG |
| 51 | VHSRQLRSNQ | LRDLVHKAPT | DTATTGRSAF | VTLVYELSAD | ETPPSKSLAA |
| 101 | QNQQKEVKFT | RLISEKGAGS | YRIDGQDVSS | EGYQNQLKEI | GILVKSRNFL |
| 151 | VFQGEVESIA | SKSPTELTKL | FEQISMSDEL | KNEYERLMEE | KDAAEESTIF |
| 201 | AYKRKKGLVA | EKRLVREQKE | EAEQFRHKQD | AVNDLRVEHY | LWQLFQVEDD |
| 251 | MTQREETVRQ | YQGARRTCSQ | KEEDVAQTYR | EKKKELNASL | REVKTNRKRI |
| 301 | QDLQSEMEDI | QPQVIRLREQ | TQYSQRKIVE | SETTEKQMKE | RQEGKAKEIE |
| 351 | GLKTDLQELE | KVKAELEAKQ |  AKEASQRGEE |  GSLVLEGSRL |  DEYHRIKEAV |
| 401 | QVKTNLLRNE | LESILRQQNA |  DKNKVETLSQ |  ERQENLKMIE |  MLSDDLKQAD |
| 451 | ERVVSMQCVI | SDTERDIADA | EKSLQTADDE | KRGQAEEKEK | LTKQLERVNN |
| 501 | KLRDLKDDKR | QSQAEARRAD | TLETLKRLYP | GVRGRLVDLC | KPTQRKYNMA |
| 551 | VTVATGKHMD | AIVVTDYRTG | QECIQYLRDS | RAGSAQFIPL | DKIRVKPINE |
| 601 | RFRGLGNNIK | MVVDVVQCDP | ENEPALHYAV | GDTVVCETIE | VARDLCFRQN |
| 651 | EKLKAVTLNG | MVVSKNGSMT | GGKTQNDLRR | AGRWDEKEVE | ALQQEKDKLI |
| 701 | DAIRAIERHG | ASYAKLQTQR |  TQIEGLKSRL |  THAKADLVIT |  ENKRPKIQLR |
| 751 | IDEAKKRVSE | VIEPELGKFA |  AAVESRRAKI |  DALQDQIHGV |  EDEMFADFSE |
| 801 | AIGVDSIRVY | EERVLKRHHK | AMEMRRKITE | HEAKLRAQIE | YLESQDFNQP |
| 851 | MLAARERATR | EAQHLKTLVE | EEAALMKTFA | VLRKERKEHE | ALRQTLSTKV |
| 901 | EELEKALREI | GSKKAKYEQR | KGKIQRRISS | EETVLERLKD | HKTELFK**RAA** |
| 951 | **LDQIK**LPTVA | RSGSEDIEME | DASASSSLEN | TELLLGADAA | NRQVDFSSLS |
| 1001 | DAHVVVDDKE | FDEINADYEK |  RIGLLLTELE |  QIQPNMRALD |  KFDVIQSRIG |
| 1051 | KEEEELDRIK | QQALDTASKF | EKVKQTRRDR | FMEAFTHISG | VIDSTYKQFT |
| 1101 | KSSKHPLGGT | AYLNLENTEE | PYLSGMKFNA | MPPMKRFREM | DELSGGEKTV |
| 1151 | AALALLFAIH | NYRPSPFFVL | DEVDAALDNV | NVNKVSTYIA | NCGFQCVVIS |
| 1201 | LKDSFYEKAD | ALVGVCRDIT | LQQSKSMTLD | LTKFD |  |

 |
| **S9** | PITG\_12490 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MRSP**VTLLLL** | **TLSFIFFNGE** | EEATTATTEV | SPESPWGRIY | LRNGLAPIQY  |
| 51 | LRDDFGGPMT | SREVSLYFPK | RRKNRFGCEL | LPESESMEVE | AANRSVVLVV  |
| 101 | DRGECTFEH**K** | **ALLADQMGAA** | **ALLVVS**PTDD | VSAPVAALKN | DEEISIASVM  |
| 151 | IRRTGGDMLR | IAAEQMTIYG | RFIPMTCERK | P**YTCKPRYAD** | **EEDYI**ESAIA  |
| 201 | RSGVVLSVDK | KGDDGTQVGT | FLAATYGSVL | PTKMPFLLAA | PLDGIQACTD  |
| 251 | ATKDSATHSE | FEGKVVLIPA | GLAGKCSEFE | KVSNAQRRGA | NVVVLMQQDN  |
| 301 | ATITTQPGVP | VSWHAYNITI |  PVLAVSSTTG |  ANLAGLKDAH |  GDAARLRFAV  |
| 351 | SNGIADAWEL | LKQYSTRSSW |  PKRVKRCSKT |  LAQLLYQLRG |  FGGDIEVEEA  |
| 401 | LKSMFLNVVS | GSLQDWEKIA |  HPDQDADQDH |  ETQKRSSSEK |  IVQTVEKSET  |
| 451 | RDEF |  |  |  |  |

 |
| **S10** | PITG\_06815 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MKSVARVAQK | TLSQARGFRT | SAAVANAAEE | PAMARVYGGL | KDEDRIFTNV  |
| 51 | YGEDTWRVDG | AVRRGDWHRT | KDLLCMGPDW | IVQEIKDSGL | RGRGGAGFPS  |
| 101 | GLKWSFMPKQ | TDGRPSFLVV | NADESEPGTC | KDREIMRKDP | HKLVEGCLIA  |
| 151 | GFAMRARAAY | VYIRGEFFNE | ALILQEAIHE | AYQRGFLGRN | CGSGYDFDV  |
| 201 | YLHRGAGAYI | CGEETGLLES | LEGRQGKPRL | KPPFPANTGL | YGCPTTVTNV  |
| 251 | ETVAVSPTIL | RRGGSWFASL | GRK**NNHGTKL** | **FCISGH**VNNP | CTVEEEMSIP  |
| 301 | LRDLIERHCG | GVRGGWDNLQ | ACIPGGSSVP | VLDEELCQDI | MMDYDDLKQR  |
| 351 | GGSGLGTAAV | TIFDKSVDMV | GAIRRYSHFY | THESCGQCTP |  CREGTGWMEK  |
| 401 | VLTRMETGDA | ELEEIPMLEE | ISRQIEGHTI | CALGDAAAWP |  VQGLIRK**FKH**  |
| 451 | **KLVERIED**PS | SFKPEDYFQK | AWPGAPLKNQ | EWVDKFADGS | AYKSQASA |

 |
| **S11** | PITG\_01938  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MVAINDPFMD | LEYMAYLFKY | DSTHGK**FDGS** | **VATKDGNLVI** | **NGEVIHVFTA** |
| 51 | **RNPAEIPWGK** | **AGATYVCEST** | **GVFTTTEK**AQ | SHIEGGCKKV | VISAPPK**DST** |
| 101 | **PMYVMGVNHK** | **EYDGSAPVVS** | **NASCTTNCLA** | **PLAKVINDNF** | **GIVEGLMTTV** |
| 151 | **HATTATQLPV** | **DGPAK**GGKDW | RGGR**GCGQNI** | **IPSSTGAAK**A | VGKVLPVLNG |
| 201 | K**LTGMAFRVP** | **TPDVSVVDLT** | **CR**LEKAASMD | AIKAAVKAAS | EGELAGILGY |
| 251 | TEDQVVSNDF | LHDKHSSTFD | ADACIALNDH | FVKLVAWYDN | EWGYSNRLVD |
| 301 | LVLHMATVDI |  |  |  |  |

 |
| **S12** | PITG\_06853 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MQRGLLRLSR | AALNNHQHVP | TAIRTISSTP | PNSGPGRRRP | SRTQVIDDIG  |
| 51 | ALVHEAKRQG | PRFQPSMDYL | R**RASAVLQLC** | KGREQCTAAI | PLCHIVEKAQ  |
| 151 | NTHSKAEMEC | VRIYQKAGRN | QEVVALAEKL | MSQDVFLLNP | ALASAIQACA  |
| 201 | AVGDM**DKGFH** | **FFDVAVKRG**S | IPNLSVYSAL | LAVAGATGDP | KRVQTVLTQM  |
| 251 | QDAGVEMNDI | TFHNLMSAYA | RGGHVTEALA | LF**DKMQKQGI** | **PADEHTY**AIL  |
| 301 | **MDAHAESGDF** | **EGANALMEEL** | KKASIGPNLV | HYNVLLKACG | KVRNLTSAFQ  |
| 351 | LYEEMKERKI | QPDLVTFITM | MHAVYHGELG | AVDQKKVKAA | LVGMGVMGAA  |
| 401 | FIPFINYEEY | MMTTLFCGSL | VGSMGLAAYM | NPDGVI**RALY** | **PNTDEPRD**DT  |
| 451 | IIEAFFRRLR | EEDHSGRSMY | LWREMLKFNV | PADPRVYDVL |  VRTCVRKRHP  |
| 501 | ELAYEAVFEE | KLPLTDKEGS | FVLNLPTTLS | LHSLLAQKR |  FN**MADTLYDA**  |
| 551 | **ARGHGVFDKV** | **FSEKGD**VYVY | DMRSFLNEQV | RSYAIIKLLD |  ELRTKVDSSK  |
| 601 | GQFVAPNVQF | LVQHGYELLD | RLDADNTSLR | TLFSMDDMAR |  IGASGDNSTS  |
| 651 | ANYMYYFRLA | IPTERLQKYF | ETTPANAGKE | RRL |  |

 |
| PITG\_15078 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MDDDIQAVVI | DNGSGMCK**AG** | **FAGDDAPR**AV | FPSIVGMPKH | LGIMVGMNQK |
| 51 | DAYIGDEAQA | KRGVLTLRYP | IEHGIVTNWD | DMEKIWSHTF | YNELR**VAPEE** |
| 101 | **HPVLLTEAPL** | **NPK**ANRERMT | QIMFETFNVP | AMYVNIQAVL | SLYASGRTTG |
| 151 | CVLDSGDGVS | HTVPIYEGYA | LPHAIVRLDL | AGRDLTDYMM | KILTER**GYSF** |
| 201 | **TTTAER**EIVR | DIKEKLTYVA | MDFDEEMEKS | TRSSALDKTY | ELPDGNVIVI |
| 251 | GNERFRTPEV | LFNPSMIGRE | CSGVHECAFQ | TVMKCDVDIR | RDLYSNVVLS |
| 301 | GGSTMFPGIG | ERMTKEVIKL | APTAMKVKII | TPPERKYSVW | IGGSILASLA |
| 351 | TFQHMWISKT | EYDESGPSIV | HRKCF |  |  |

 |
| **S13** | PITG\_02284 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MPPHSATPSS | PVATAGVRRD | LLLYVNGERI | EISERDVHPE | QTLLQFLRHD |
| 51 | LGLAGTKLGC | GEGGCGACTV | MVSKFDVATG | RVRHVSVNSC | LAPFCAMDTC  |
| 101 | AVTTVEGVGT | ITGATGEATG | LHEVQKVLAE | SHASQCGYCT | PGFVMALYSM  |
| 151 | VKQRESGVEL | TMEDIEHGMD | GNLCRCTGYR | PILDAAKSFG | DDAGEAHCKG  |
| 201 | TCPGCPNAKN | GDADVDIEDL | HGDNHQEVTS | CSSRKIRELA | KHCQLREKHD  |
| 251 | VDTVTGASKN | TKALAVSSFP | NELMEKAMAP | QTLQIDGKYI | QWFAPVTITH  |
| 301 | LLQLKKQHPD | AKISVGNTEM | GIETKFKGFK | YAHLINVSRI | PELVATKDVT  |
| 351 | QTDPINQTVF | SGAEPFEGVK | LGAAVTLTDV | KQQLSELIKT | MPVYQTRAFE  |
| 401 | SIVKMLKWFA | STHIRNVACI | AGNLVTASPI | SDMNPLLAAM | NAYIELQSTR  |
| 451 | GTQYTRVRDF | FLSYRKVGME | PDEIITAVYV | PYTKKWEYML | PFKQARRRED  |
| 501 | DISIVTAGIR |  VRLECSGDND |  AWIIQDASAV |  YGGMAPITKS |  AAETEQFLIG  |
| 551 | KTFNASTFGE |  ACDVLHSSDF |  ELPDGVPGGM |  AKYRESLCSS |  FLYKFYVASS  |
| 601 | ERLQLDLQAI |  KATGSLLSDA |  PVVDSTMQSA |  GTSFLHQVRP |  VSHGTQRFGR |
| 651 | ETGGLQDSKH |  QPIGDAKTKR |  GPVGDPLMHK |  SAYLQVSGEA |  LYTDDIPNTP  |
| 701 | GTLHGALVLS |  TCAHGLIKSI |  DASEALAMEG |  VHRFFDASVF |  ETEKLGSNKI  |
| 751 | GPVLKDEECF |  ASKEVLCVGQ |  PVGIIIADTH |  ELAMAASDQV |  QVVYEEL**PSV**  |
| 801 | **TTIEEAIREK** |  **SFILPAHTIN** |  **SGNVE**TGLAE |  SDIVLEGEVH |  MGGQEQFYFE  |
| 851 | TNVSLCTPQE | GGMKVISSTQ | AATKAQVLVA | RVLGINSNRI | TSTTKRIGGG  |
| 901 | FGGKETRTVF | VTCAAAVASH | VMKRPVKCLL | ERHVDMLTTG | GRHPFYAKYK  |
| 951 | VGIKQDGTIL | ALDVDIYNNA | GYSMDLSLAV | MDRALFHCEN | AYKIPNLRCH  |
| 1001 | GTVCRTNLAT | NTAFRGFGGP | QGLFIAETYI | DHIARTLKLS | PEDVRTRNMY  |
| 1051 | VEGQTTHFGQ | PLEDFNLRTL | WQHTIDRSGF | EAKKAEAEVF | NKNNRWKKRG  |
| 1101 | VAILPTKFGI | SFTSKFMNQG | GALVHVYADG | SVLVSHGGVE | MGQGLHTKVI  |
| 1151 | QVAARAFGIS | HELVHIEETS | TNKVPNSQPS | AASMSTDLYG | MATLDACEQI  |
| 1201 | LARLAPVRQR | LGPDASFSDV | TNAAYFERVN | MSAQGFYIIP | NERCGYDFSK  |
| 1251 | SVDENIAVGT | AFNYFTTGVA | CTVVELDVLT | GDFHMLSVDI | LMDLGASINP  |
| 1301 | AIDIGQIEGA |  FMQGFGLFAL |  EELVWGDNGH |  PWVKRGNLFT |  RGPGAYKIPS  |
| 1351 | ANDVPLDFNV |  WLESNQKNKF |  AVHSSKAVGE |  PPLFLGSSAF |  FAVKEAIYSA  |
| 1401 | RADAGHHGYF |  ELRSPVTPER |  ARMACADEML |  KKVFTARGGD |  MVSYQPSGSF  |

 |
| **S14** | PITG\_05074 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  1 |  MRHHQRAALI | LIALACLLAM | SAAVIDDQRF | ALNGRTLRTS | MTSDDEKDDD |
|  51 |  DRMVDLSGLG | QSAKLTELGA | LKDIKMKPIA | ALTLSKLDEA | GDDLFTSPKF |
|  101 | KTWVNYVASV | AEK**HSTTTMM** | **SKLTAQYSDG** | **SLIR**MLEAAK | KVEGANEIAL |
|  151 | RLQQRQVRTW | IKAEKTADDI | FELLKLDEGI | EKLLTNSNLG | TYVSYMNLFN |
|  201 | KYSPGKETTL | VNTFVTYYGD | EAVAKTIEA |  |  |

 |
| PITG\_23137 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  1 |  MRLIAGVLAG |  FLIICEATSA |  SESDHTMAYQ |  TAGTDNTQPT |  DAVENSIASK  |
|  51 |  RF**LRADVVMN** |  **RGVERIF**EAL |  KNLLPGAKIF |  AKDGASFSGT |  FVRKMLGDKA  |
|  151 |  FRKQEFERWI |  RSDIDGTALR |  RMLGDMNKKG |  RAELLNRYTA |  FLGSKDGLVY  |
|  201 |  YKPGPIA |  |  |  |  |

 |
| PITG\_15764 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MRSCFVLIIF | LAGICKCLSL | NWSGNTLKER | SHTSTNSLPS | PPFISTIKTP |
| 51 | KRFLRSYDAP | KQDNIGHDTD | ERAGISGIAM | IDDLAYKWAL | KNTRDPMDAF |
| 101 | QRLHVVKTGG | KLEGNKEFIR | WLQYVNRYKA | TRRVKFGEDE | LLSLLMKTRA |
| 151 | EEELVSLFQS | LRQYPDITKM | ASDMQASMIL | SSASSHRLIN | EAWLMSRETP |
| 201 | GEVFKILRLG | DNSISRLENN | PLFIQWLRYV | TMYRAVHGRI | WKHYLSVSRL |
| 251 | YHNLNFLIQS | LQNFPDLEK**L** | **ALSLQTHLYR** | KWMIEIQLTP | SELLGLLETT |
| 301 | RVARSDPKYR | NLEAYTMYFA | ESRGGTPLLN | KLKTLFTDVD | PYAALSAASS |
| 351 | A |  |  |  |  |

 |
| **S15** | **PITG\_13116** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 |  MARTYLIGGN |  WKCNGTVQSV |  K**DLCALLNK**V |  EITSDKVEVI |  VSPPALHIDL |
| 51 |  AKSLLQKKIA |  VSAQNVSLTG |  TGAYTGEIAA |  EQLVDFGLEW |  TITGHSERRA |
| 101 |  YYNETDEIVA |  KKTKRALDLG |  LKVIFCIGES |  LEEREGNK**TM** |  **DVLIR**QTQAL |
| 151 |  ANIVTEADWA |  RIVIAYEPVW |  AIGTGVVATP |  AQVQEAHKDL |  RGWIAGK**VSP** |
| 201 |  **EVAENVRIIY** |  **GGSVK**GDNCE |  ELIALADVDG |  FLVGGAALKP |  EFEKIIKSAF |

 |
| **S16** | **PITG\_17261** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MGLSQERKLE | YFDK**LESLLE** | **NYTKIFLVGV** | **DNVGSAQMQQ** | **IR**LVLRGR**AE** |
| 51 | **VLMGK**NTLMR | KVFNNFVKKN | PGHPLELFIP | LLK**GNVGFVF** | **TNDDLSEIRE** |
| 101 | **VLESNR**VPAP | ARVGSIAPVD | VIVPPGPTGA | DPGQTSFFQA | LQIATKIQKG |
| 151 | QIEIVTEVML | TRKGEK**VGNS** | **EAALLQK**LDI | KPFSYGLVIE | QVYDNGSIFD |
| 201 | PAVLDLTEAD | LCAKFVAGLR | NVAAMSLELG | IPTLASIPHS | IANAFKDLVA |
| 251 | IAVECEEFSF | EKAEPYK**AFL** | **ADPSAFAVAA** | **PAGGAAATEE** | **K**KVEAVEEEE |
| 301 | EVDMGGGMDM | FGGGDEDY |  |  |  |

 |
| **S17** | **PITG\_09556** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MAETSIYPRA | ELDGHNGKAV | TAIATTR**ENP** | **NLLLTASR**DK | SLLVWQLSND |
| 51 | GEEYGFARRR | LQGHSHYVED | VVISSDGQFA | LSGSWDGTLR | LWDLNTGITT |
| 101 | RRFVGHTKDV | LSVAFSADNR | QIVSGSRDKT | VKLWNTLGEC | K**YTITEDGHT** |
| 151 | **EWVSCVR**FSP | STANPLIVSC | GWDKVVKIWN | LSNCKLR**TNL** | **FGHEGYLNTV** |
| 201 | **TVSPDGSICA** | **SGGK**DGTANL | WDLNEGKRLY | SLVAGDVIHA | LIFSPNR**YWL** |
| 251 | **CAATTSGIK**I | WDLESK**IVVH** | **DLQPEIEEPK** | GKYAQPPHCI | SLAWSADGSV |
| 301 | LFSGYTDGIV | RVWAVGN |  |  |  |

 |
| **S18** | **PITG\_02256** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLSPRAIQSA | RGVATKAATG | KWLASVPMGP | ADPILGLTDR | FNKDTDSRK**I** |
| 51 | **SLGVGAYRDD** | **DGKPFVLPSV** | **LEAEK**RIMAA | GKNK**EYAGIA** | **GMK**DFVDLSL |
| 101 | EFAYGEDCEA | LKEGR**ITGVQ** | **TISGTGGVRL** | **AGEFFNK**FLG | KNTPVYLPNP |
| 151 | TWGNHIPIMK | NAGMEVR**RYT** | **YFEPASR**GLD | FKGLMNDLEG | APDGSVFLLH |
| 201 | ACAHNPTGVD | PTIEQWQEIA | DLMKTKKHVP | FFDCAYQGFA | SGDASRDAAA |
| 251 | IRHFVK**EGHN** | **IFLSQSYAK**N | FGLYGERVGA | LSVVTDSKEE | AERVQSQLKI |
| 301 | IIRPMYSNPP | IHGSLIVSTI | LSDAQLKKQW | YSECKAMADR | IISMRTALRS |
| 351 | AIEKIDATNG | VQSNWNHITD | QIGMFCYTGL | TEAQVAR**MMD** | **EHHIYLTK**DG |
| 401 | R**VSMAGVTTK** | **NVEYIAKSIT** | **EVVQNA** |  |  |

 |
| **S19** | **PITG\_14492** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MVKYVLTGVG | GNIGGHAADH | AVEIKKPEDV | LVLTSSDVSK | LNPERVAAWK |
| 51 | AKGAIVEQAD | YLDVDSLKKV | FEGAEAIAFI | STWLIGDGRR | GQMKNCIKAA |
| 101 | KETGVKRVCY | TSFVGAGSDK | PNEEVPFLPQ | DHQFTEQQIY | ASGLDYNIQR |
| 151 | **DYLYQDNTPR** | FFAQSWHFTE | DRWLSNSHDV | PGAYVAISDC | GRVFAALLLG |
| 201 | KQEK**NTVVEV** | **TGPEAVTDR**D | MFEWMNSISG | YK**GQFVDLPD** | **EELR**AYWLGR |
| 251 | GLPTDVYGDF | SKLPMKLCIG | DLLCCGEMLA | NGSMSK**VTDT** | **VER**LTGRKPL |
| 301 | GYKENLLQYK | EIFPKNQ |  |  |  |

 |
| **S20** | **PITG\_07671** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLSSLSRRSH | PVVPAIARAS | SSLMSDVHGT | THGKKHWKNK | PLFRRGGDKK |
| 51 | FR**NGQEAADM** | **LTDEVIR**RDP | NQAEYVQAVQ | NFVNSVVPVF | DRYPKYAWVM |
| 101 | KTLMEPERLI | QFR**VPWIDDE** | **GSSR**VNRGFR | VQFSSALGPY | MGGLRFHPET |
| 151 | THGTAKFLGF | ETIFR**NALAG** | **PYGGAHGGSD** | **FNPMDKSESE** | **IMR**FCQSYMT |
| 201 | ELVNYIGPHT | DVPTAGVGVG | PQEIGYMFGQ | YKRMRQLHPG | GTEGILSGGA |
| 251 | YHYPQVTGYG | VAHFANRILE | TRGETLKGKR | CLISGSGTVA | LNVARKLLDF |
| 301 | GAIPIGMSDN | FGYVIEDQGF | SSKSLEELKR | IKEERNARLG | AYIMSSTTAN |
| 351 | YHPSEEGRLW | ETPCDYAFPC | AIQNDVDADA | VRLLVKNGCK | GIFEGANFPC |
| 401 | TDEAISLIKQ | HGLAFGPNKA | SNGGSFALIT | KNLGSSTQML | DDEVDVIVKE |
| 451 | YMDKLHDRVA | ASAEEFNAGG | DLHVGANITA | FMSVAAAMFR | QGVV |

 |
| **S21** | **PITG\_13946** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MTKSIEEIYG | EHCIQHIKSV | DKYDETKLGD | SRVLSPSIWI | KSKMHVVGDS  |
| 51 | INYKHSDDGT | PDFGNDGYTY | LLQYQFNELD | KSQMLNNFFF | KSNEDRESFE  |
| 101 | QANVECGVEY | FLATQSYDER | LYQLCMMIRG | DLFSNNQNVW | NLAGFFARQP  |
| 151 | HSDWHLVRKT | YLCVLKQKSR | AFQ**QGLVELT** | **GRTINDMR**SA | MVDTSFENDE  |
| 201 | LEYWAEKYLV | IENKPNPVDP | NDNKMRLTCI | LAVLVAVTFH | ATGNANSAVA  |
| 251 | GKASNEYGVD | MITTTAIFVE | NPRRKHLFIL | GADATSQEAF | HRVVVLHPRG  |
| 301 | FPLLPRQVER | QSGWINFEAI | IDVFLLVHMA | FCSALTFALL | AIFTGNTVPS  |
| 351 | PYTAHSNSTS | AIFVRKVLD |  |  |  |

 |
| **S22** | **PITG\_10210** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MFTSALRASL | RVQRLGAMKM | AQSSPAFSSS | FGLRTFANAT | AASLGIDK**FG** |
| 51 | **VTNAK**TQVHR | **NLSYDEIAVH** | **EEK**NGEGHFV | KNGTYTIDTG | KFTGRSPKDK |
| 101 | **FIVDQAPSSK** | NIWWGDINQP | VSPEVFDELY | ETVSEHYGQA | EK**VYVFDGYA** |
| 151 | **GANPASR**KKV | RFITELAWQH | HFVTNMFLRP | QTK**EEIADFK** | **PDFTIVNACK** |
| 201 | VTNKNYKKHG | LNSEVFVAFN | IEKDVAVIGG | TWYGGEMKKG | IFSMMNYWLP |
| 251 | LDGIMAMHCS | ANKGK**NGDTA** | **LFFGLSGTGK** | **TTLSADPHR**Y | LIGDDEHGWD |
| 301 | DEGIFNFEGG | CYAK**TINLSA** | **ENEPDIYNAI** | **K**R**DALLENTY** | **VDAETKEPDF** |
| 351 | **YNTSK**TENGR | VSYPIYHIPN | HEPTSSGGHP | NNIVFLTCDA | YGVLPPVSK**L** |
| 401 | **SDGQAMYHFL** | **SGYTAK**VAGT | ERGVTEPTAT | FSACFGAAFL | PLHPTKYADL |
| 451 | LQKKLQKHNT | SVYLVNTGWT | SGGYGVGKRM | SIKDTR**ACID** | **AILDGSIKNS** |
| 501 | **EFLEDPNFGF** | **SVPKKLGEIP** | **ENVLNPR**EAW | SDKEAYDVTA | KK**LAGMFQEN** |
| 551 | **FK**K**YVSPGVT** | **DYSK**FGPKL |  |  |  |

 |
| **S23** | **PITG\_06059** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MRLTYVLLAA | ASTLFARHVT | STPYFANDVA | LTGVLSLGFI | HFVGADQSVS |
| 51 | DQSRFLRGGS | IDEDDNEEIN | FLELVKQAMT | NNFVNKLMKK | SSFSDLEKID |
| 101 | DFGELKRIST | IIDDKLNNLF | KQADDA**NKSP** | **DELAK**ILKEM | PDVDDALTAK |
| 151 | TLEMYTDYLK | AVGVRVPT |  |  |  |

 |
| **S24** | **PITG\_10292** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLRIVSRFNQ | PARRVMQTSG | KSLAGAHNLQ | CRCGNCVQHP | TGCTCPRCQS |
| 51 | RSFSVKSQSH | YDIPKTQTAV | VFEDNNAPLQ | VRKDWPVTQQ | KDLKPGEVLV |
| 101 | RLAYSGVCHT | DLHVWLGDWP | LDNKLPLVGG | HEGSGYVAAI | GDHSYTNLKI |
| 151 | GDPVGVKWLA | NSCLGCEDCR | KGHESTCIDA | DLHGFTVDGS | FQQWCVSFAD |
| 201 | HVTPIPTDLP | MHAAAPILCA | GVTVYKALKE | IGGQCGDFVV | IPGAGGGLGH |
| 251 | LACQYARAMG | YR**VIAIDSGD** | **DK**RKLVASYG | IKDFIDFKEG | NVKDKVFEAT |
| 301 | EGRGAHATVV | VASGGEAYKD | ALSFLRPHGA | VVLVGLPKDT | YITAEVFGSV |
| 351 | LNAHR**IIGSY** | **VGNR**QDSIEA | LK**VAAAGDVN** | **TTYK**IEKLEN | LPDVFQRMAD |
| 401 | GKLAGRIVLD | **CE** |  |  |  |

 |
| **S25** | **PITG\_12548** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MESAPVDDGL | VFLPQASSGL | ELLCVALYLS | LALVAACRAL | SQGSTFHRSQ |
| 51 | RSTFQRLMVL | FAVTRAASFV | SEGLARNLLN | RAALCLFFSL | VLFQTLLWID |
| 101 | IANPKVSTRS | RRIWIAFVVA | NGLFYAAVLG | LSVMHEAKVA | QARHSKSRLN |
| 151 | RSTLWTGVLP | VLFIATGSFV | SSLGLVYSTW | KMRHRVERVL | KPSGNGLRRR |
| 201 | LDERVEKKLT | SALRFTSVVM | GACSVLFFLR | TIIYVQRPFS | HQGCGDIHSP |
| 251 | DVCVVVGYVI | PEIVPCVLFL | VLMWEVEPTL | EIPSRRSLSY | TKGRVTSETT |
| 301 | PLLDNEAMPP | PLLVAAKEFT | DRIGTASKSA | VTQPNSPPGS | QSGYFTVGRR |
| 351 | PSPLSLGLGN | GVLGRARRRL | ELVVRQHLGG | ASNEQHSDDP | WRWPAQSASS |
| 401 | TPCAWFSFQC | FNLTLPSKSS | VTSSSFVVLH | LMNAETGAVI | AEIGRTEISH |
| 451 | SEDPCFHMML | AVDMREQDLL | RASVYSVRNP | NSLQNLDSQW | LVGDPLVPLS |
| 501 | SFMTGSLPTI | GRAAIFSLYS | PLSRTRSSGE | IVIRCEAEVK | GLHAGMSTDG |
| 551 | LERITRSFMY | IGIKSTDAED | HDDSAYSEIA | QQMINLASTS | QRSQGKVLVE |
| 601 | EELIESVYTW | EVPYQLLQLI | **LSDLLMKLDS** | **LKR**EIALEDG | DESSSSTPSS |
| 651 | QLSTPSVGGY | SMPSVITTPR | ALGTNRVRPA | TSIGMLSEMI | IQIQDDAIER |
| 701 | KKRKWRLDLV | KTMEQYISEV | EDSILRYGAT | QHAGLTFKPS | TMKADADLRF |
| 751 | LALNLHQQLL | TVGNAAPTSE | KDVQYGDQSS | AARYARLVNS | FVGTLLSSPL |
| 801 | HLSRKASMRD | QQTDLGSVLF | VDADKSDENE | VASPSASEES | PLEPVEALRR |
| 851 | RVISFDSAET | IVNKRAAGQD | VSVPSEQRKL | AETIVAMGIT | EEEFQRIYGL |
| 901 | DENLKKAAMT | IDTNARNRPP | FYRHRMYGTT | TVGAFAAHVY | GFKSGGVRQM |
| 951 | RAELEKLHAR | LVKEAQASSD | LTMDALERKY | NELKWDVERR | LEVAFCQAMS |
| 1001 | ALVTCFQQTL | YVHTHDHRDF | GPHPLKACGI | DYLEMLTRVG | FLFSAESLLS |
| 1051 | TYGNELGMLG | DTEAAVKELA | RVHVKLRPVK | SPRAATFRVS | ITSGPSGIVI |
| 1101 | ELPIITRRAS | EFPDRSMHRV | PGQDAVSGAI | YLPLSTPEQK | MRAKFLFQKP |
| 1151 | IRVIPVIFSQ | GLNEMQTVAN | TVGKASLQKE | INAENVVELE | SYVKNFAEWV |
| 1201 | TKKQCRETSI | PIYDMEDLDR | IQTSLVALKL | SIQLSGRSKR | MAILSLSSAI |
| 1251 | ARSVGGGRVT | MCKSAKDRTS | MSITLEEANL | LVRSHGLLAD | DMETFTDLLR |
| 1301 | TYGVRRENAR | KNIGKAQYCF | SALQNYMLPQ | DYQCPPGTGG | GSRAYS |

 |
| **S26** | **PITG\_00585** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MVSTRSR**TNS** | **GSSSAAELPQ** | **K**RSATADASK | RPTKKSSTPK | AAASDLAVGK |
| 51 | PVTVNVTLVN | QEEKEVVIAD | TFRDQGVVFF | MYPRANTPGC | TKQACGFRDN |
| 101 | IQTIKDAGFT | VYGLSGDSPK | SLANWKTKQS | LPFDLLSDPE | HKLISYFGSS |
| 151 | LPGKKVQRSH | VVVLKGGVVG | EIAAK**VSPAD** | **SVSR**AVEFLA | EGNTVNFDVE |
| 201 | LQTDSSATVK | VQDLFKTRGA | IFFMYSKADT | PGCTTQACGY | NDNLEAINAA |
| 251 | GFDVYGLGAD | SPAELLAWKE | SQKYKYTFLS | DPKHHLIGYF | GSSINDGTRV |
| 301 | ERSHVIVLPG | GKVGQIEHNI | SPQDSVTKGL | EFAKSHTVDA | ASKL |

 |
| **S27** | **PITG\_00682** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLHRALKSSS | LLMPRVAAAM | PAQLARASST | MALPTSLER**L** | **FENNK**KWREG |
| 51 | K**KLLDPDYFD** | **K**TSQGQHPQY | LWIGCSDSRV | PAEEITGLAP | GEMFVHRNVA |
| 101 | NLVVSNDISS | LSVVQYAVEH | LKVKDIIVCG | HYGCGGVHAA | VENKHLGLLD |
| 151 | NWLRNIRDVV | R**IHNDELQEI** | **DDHEQR**MRR**T** | **VELNTIEQCI** | **NVFK**IGLVQR |
| 201 | HQVKYGFPR**I** | **HGLVYDLK**NG | QLNEMDIDFQ | SYVRKYQSIY | K**LHSFPQGEV** |
| 251 | **PLR**RSQLQGN | MIR**ALVEGHE** | **EEPGHVSAK**F | VKRAMSK**EPI** | **LFSDSEINSA** |
| 301 | **IAR**AQEGEAN | NNTVDIEKLA | RYFDH |  |  |

 |
| **S28** | **PITG\_04081** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MRSIFYVALA | FAILCRSSAS | AALPNLDETR | **LLSDTSAKR**S | LRVAGKEVAR |
| 51 | GGRGEDVVRV | IVQSSNKIFK | RPADKDISKL | IAAAKKAKLE | KMKEKPSSVV |
| 101 | KEVTK |  |  |  |  |

 |
| **S29** | **PITG\_03719** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MAASTHNMKY | **RFLGNTGLLV** | **SR**LSFGSWVT | FDNQLDFEKA | YSIMEHAYKN |
| 51 | GVNFFDNAEV | YANGQSELIM | GKVVKAGIER | KVWER**EDLVI** | **STK**LFFGTKS |
| 101 | GPNDVGNSRK | HIVEGMKASL | KRFDLDYVDL | VFCHRPDPAT | PIEETVRAMN |
| 151 | FIIEQGWAFY | WGTSEWCAK**D** | **IIEACEIADR** | LGLIRPVYDQ | PQYHILERSR |
| 201 | VEYDFDVLYK | KYNYGLTTWS | PLASGILTGK | YSKGIPEGSR | LSMPSYKQML |
| 251 | SNGLEEKVAK | ADKLAEVAKE | VGCSLAQLSI | AWVAANPHVS | TVILGATSIK |
| 301 | QLDENLKAME | FVDKITPELR | **EKIDAIADFK** | AK**LVPQAEPH** | **VINLR**QKWL |

 |
| **S30** | **PITG\_01904** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MRFHCTILLA | ILAFLDSTCR | AALSSPTMER | LNVAGNNAAL | SRRFLRSTGS |
| 51 | NIGGMAAEER | SALSKIAGGV | AK**ISPSGHDI** | **ANK**MWLKLRT | NPEVVFKELK |
| 101 | LGKTGVK**LDK** | **ITQLSCGG** |  |  |  |

 |
| **S31** | **PITG\_05737** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MYEGMSTPPS | DKLTQLRPRM | SDSEAKTMSN | ESRQSSVSAG | GHGAPREYDQ |
| 51 | EDPQRIPMMP | LMGQGAVASS | VISRLSVGSH | LSLNQLATSH | AGQLRRRPPS |
| 101 | TISNKKKSFY | NAQPNAALRG | KMPHVPRHWL | NARFRHNTFF | ARRLLHTGVP |
| 151 | LAFVLAAGLG | FYYFYKPDTL | TLNPDMPDVH | GFTLHSPNLV | YTFQATSCEN |
| 201 | VVGFSALIYH | TLPAVILLCL | PGSGWRLFEP | FKRDEVFSPN | ASGAPDDDEE |
| 251 | DNSNLTKIKR | RLVFQLCELV | AVLLLLFQAV | VVMFFLYMFF | KGGVFSCSNH |
| 301 | SVQLFALVSM | MCFVWIFTEL | QYFARFREHV | KMLLGAFQES | DQTGDVRTHV |
| 351 | MDPGVDQLMN | QADKALAVVR | KRLYKATRQG | DLREMRDILD | YAEAAGLTSE |
| 401 | EQGFPRKSYA | PASLFLGFFA | QSRKNPVHVA | AYHGNIRALE | LLESRGFDVT |
| 451 | AMDKFSRVRF | STGDLFWYFA | RFFVARPGVD | GGGSDEESAA | SIFRTTLVTP |
| 501 | LHCAVSTGQL | EAVRWLLLRG | VSARTLARSS | YRSDRVPPLF | LAEHPDVVRE |
| 551 | LLVHGADPLA | VPDPGFMNTL | TALQLAYLRG | NYAVAQELED | WGGDVALTPF |
| 601 | HSAAGRNDVL | AVRKFLRKKT | DVDCL**GELGY** | **VGLNRRTPLH** | WAAVSGALEV |
| 651 | VDLLVEAGAD | PNFQDARGRT | PLHWAARLNR | TDVLR**SLLDA** | **GADAKLVDLD** |
| 701 | **YMTPMMCA**AS | GLDATREVFG | VLTSAGADIN | YQLPTTGDTA | LHIAVREENE |
| 751 | QSALAILANG | GNLMKMNIEG | LRPLDCTQST | RLLFEIKRAA | GQRDVMISYT |
| 801 | HSHAEFAKKI | RKALEDANVT | TWLDLMDPSG | IGGGSVWREE | IARGITNAAV |
| 851 | VLCLLTEDYA | QSEWCLKELA | LAKQVGTPIL | AVSTEGVGIG | EDLQVYLYTR |
| 901 | QLIPFEPAIT | QTRRNSTNVR | QIEYDYDEAK | FKAQFRLLLD | GVRDEIEKNR |
| 951 | DAVQQKNIAS | NRRNNGLKQT | ATGTILATTT | GGFSRLFQQW | DPEASGAQKQ |
| 1001 | FVFLSHGDKH | AGFVQQLYRE | LTDAGVVCYG | DRNVEGQDFE | NRIHATQEAI |
| 1051 | LRCTCFIVIL | SKQTMNNELV | RDQLAFAEDK | GRPIFPITLN | DLDPGLDKRY |
| 1101 | SLARNELFHF | MGNGMSFKPS | ADRLIQGLRR | HYTAREDNQG | TMLDNSTRIA |
| 1151 | SANTSFVSFT | FSEPGTKDLD | REATGEPIIQ | EGAVLRASSD | FPRTSSEEPS |
| 1201 | NEAESTTVTR | NFESISGIED | AQLDLSSTHI | RM |  |

 |
| **S32** | **PITG\_11244** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MAQSVSGYSV | GIDLGTTYSC | VGVWQNDR**VE** | **IIANDQGNR**T | TPSYVAFTDT |
| 51 | ERLIGDAAKN | QVAMNAHNTV | FDAKRLIGRK | FSDPIVQADI | KHWPFKITAG |
| 101 | AGDKPQITVQ | FKGESKTFQP | EEISSMVLIK | MREVAEAFIG | KEVKNAVITV |
| 151 | PAYFNDSQRQ | ATKDAGAIAG | LNVLRIINEP | TAAAIAYGLD | KKGGERNVLI |
| 201 | FDLGGGTFDV | SLLSIEEGIF | EVKATAGDTH | LGGEDFDNRL | VDHFTQEFKR |
| 251 | KHRKDITENQ | RALRRLRTAC | ERAKRTLSSS | AQAYIEIDSL | FDGIDFNSTI |
| 301 | TRARFEDMCG | DYFRKTMEPV | EKVLRDAKLS | KSQVHEVVLV | GGSTRIPKVQ |
| 351 | QLLSDFFNGK | EPNKSINPDE | AVAYGATVQA | AILSGNDSSE | KLQDLLLLDV |
| 401 | TPLSLGLETA | GGVMTTLIAR | NTTVPTKKSQ | TFSTYADNQP | GVLIQVFEGE |
| 451 | RSMTRDNNLL | GKFNLDGIPP | MPRGVPQIDV | TFDIDANGIL | NVSAVEKSTG |
| 501 | KENK**ITITND** | **KGR**LSQADID | RMVSEAEKYK | SEDEANKVRI | EAKNALENYA |
| 551 | YNLRNTLNDE | KLKDQISEDD | KKVIDDKVTE | TINWLDANQS | AEKEEYEGKQ |
| 601 | KELEGVANPI | LQKMYAAAGG | APGAEGGMPG | GMPGGMPGGM | PGAAGGAPPA |
| 651 | GAPDQGPKIE | EVD |  |  |  |

 |
| **PITG\_03550** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MAKTPSKKAA | KTVAKSGKGK | GKKRVESYST | YIYKVLRQVH | PDTGISKRGM |
| 51 | SIMNSFINDI | FERIASEAGK | LSRYNKKSTL | SSR**EIQTAVR** | LMLPGELAKH |
| 101 | AVSEGTKAVT | KFTSA |  |  |  |

 |
| **S33** | **PITG\_16013** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MPDRLIHNRV | FKVSKELNRL | DLLCEQHRRQ | IGHRKGLPDW | ERPNTPAGKA  |
| 51 | SGRRGRTPAF | FAWNEESEHT | PRPAWQPETP | QKVARTLHLT | PTRDRERDED  |
| 101 | MQPAPERSPY | ESVGGGNLET | TTALPSEQVE | HEGVDETSAI | EVDSDDRSVE  |
| 151 | EDRPVVA**ERS** | **IAVSPLR**EDI | LDRLHPPAAA | TVSSRNPTPL | STVEAASSPY  |
| 201 | HPPLSPRYRH | GRRLEASDAA | VPTPRAQQYA | AGVTTEQADR | FRMSRTSGKR  |
| 251 | FRSPAKRTTL | WGDLCDTYIH | QSGASSNQNN | SRFAHKRATP | SAAERAFGGS  |
| 301 | SVFRTLNMNA | **SAWPTSDSAG** | **GQRRPVVTGS** | DAMNVANHAV | RAFLAGCDDE  |
| 351 | TKQSEPPMQS | HLRGGESEWV | TGAVETSDQL | PSVSATGSRT | GNNRKSKRVS  |
| 401 | **FGGQNTRPQP** | **RT**LPVLADKT | TQTEDSLLPA | RYNVRTLPRD | TQTGDYPASV  |
| 451 | RCAACDSAAD | ESGRPRKIPR | GSASSIAESP | AQQHRHRQQL | ARIYPKYVRL  |
| 501 | RQGSDIRYRL | KFTRPPLKGK | AVTIHVRVIM | NKIGITASPP | SLVVTSKDWR  |
| 551 | QTREITVTSS | EDSELRTFQI | HHKIHETYDD | VYSSAAMLPS | LFVSVLQKEA  |
| 601 | TFLFGFGCTV | DGRLGTDGGT | NMTTPTPFAC | RWLHPLQLSC | GKAHSAIIDV  |
| 651 | CSNLYCFGLG | ASGQLGQGED | SLESSQEPLR | VPHLASTCVQ | YVACGSNHTL  |
| 701 | CLSVDGRVFS | WGDNSCGQIG |  MGCKTTQIVS |  TPYRVDKIVS |  LRGIVCGGNQ  |
| 751 | SFILTKTNVL | ACGSNVAGQL | GMGDRIDRTS | FEHIPFFRKV | WEKLDLEASP  |
| 801 | LADGTLYAWG | FGEEGQLGLP | DEDLEPTRRV | ALLPVPVHAL | SGTGATMVSC  |
| 851 | GGSHTATSLV | RNSSILQDVD | AAVLVEQNPV | LSLYPLL |  |

 |
| **S34** | **PITG\_08802** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLQVSQFRAL | RRASATASSS | RANAFQLTLA | RAFAAQGGDT | GVSHEDLQRA  |
| 51 | LDKFQKESAS | KTVPWFLKNM | PPSYFRSIEE | DDRLQHLNAI | TALVNAQQPE  |
| 101 | VMLRSTDHRV | FSHFRSGANF | PGRLANVLDQ | LPQTVDGATL | ARVKIFTSLD  |
| 151 | DSLGLDIFRF | GQQEPFLNKT | EDEQLARASI | QQFCAGIQAG | KHVGDSSYPK  |
| 201 | PGPHFEPEAV | DTFLKHSNTM | YVQYSNPRRL | AWQMELFSQV | RGTEGVAVDV  |
| 251 | EHKWETRSDE | NKLGGGVPQT | MLTIAASNVI | PKGFMQKAAT | YLGLCSLNVV  |
| 301 | RAHLDVVKDP | QNGSAHVAMI | RILVQPSEEA | QKDHFQFEWS | KISGNLKYLK  |
| 351 | WVDDHPVHLT | LQHPELGLSR | AELIYAYGNM | LHGVLAKKDP | FAYSLTRIME  |
| 401 | TLEHPQNLPL | AWRIADFFLT | KFDPQQERVM | TDAEQDAVVE | ELKKEIRRNV  |
| 451 | EHEDAILLLN | SMADAVRGTL | RTNKFVRDRY | ALSLRMDPKV | MGYGTVGKDT  |
| 501 | PFGVFFIYGR | RFKGFHVRFR | DIARGGLRMV | YPSSTDAHAL | ESARQYNEAY  |
| 551 | NLAFAQQLKN | KDIPEGGSKA | VVLCDPIVGP | VGDVAPRDFI | IRKSVKAFSD  |
| 601 | ALLDLNTTDE | EVKAKIVDYY | GKDELIYLGP | **DENIIPGDIV** | **WMTKRAAYRG**  |
| 651 | **YPIP**RAFISS | KPDAGFNHKV | YGVTSEGVAV | FADVALRSQN | IDPKNQPFTV  |
| 701 | KITGGTDGDV | AGNVIKILHR | EYGDNVHIVG | ICDGTGVIED | PQGLDMPELL  |
| 751 | RLVHESLPLS | SFDESKVSSK | GIKHDINTQE | GIRARNSMHN | RVKSDLFIPA  |
| 801 | GGRPNTINEN | NWRDYLDADG |  KPASGLIVEG |  ANLFITPEAR | QLLFDNAGVV  |
| 851 | IVKDSSANKC | GVVCSSYEIV | ASMLLETDEF | LAVKDELVVE | VVDKLRALAR  |
| 901 | VEAQLLFREY | KKDPTSALPP | ASERISRAIT | RVHDAVLAHF | DDVCEEDQQI  |
| 951 | LFTLIEEHLP | PKLRELALDR | VQQNVPLAYI | RSIVASSLAS | KIVYREGLQF  |
| 1001 | TEALPDSNLG | NMALQYLKQE | KKVQQLVKDV  | IADLLARGGV  | RSSQLPHKGD |
| 1051 | RAGLDTPN |  |  |  |  |

 |
| **S35** | **PITG\_01700** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MYWWPKMYKW | VGTYVRTRET | CQWTKSAPST | AAPLVSLPAP | KECWQSMSMD |
| 51 | FVFGLPKDKA | GNTGIVVLLD | RLSKMAHLAA | VSNTIDDDLG | KEMDAKEQTA |
| 101 | IVVRFIAIVL | YFSVCAGTCW | AETKQDHVFV | AGQTLLAASY | YRVKRRQPLI |
| 151 | LGDIQHTLES | ASCSPSSLLP | TSTSSVMASS | DFFREPFTVN | SKNVVYTDDE |
| 201 | ITSQYTYTTT | RVEGTVATPV | DEKFTFKTQR | KIPKLGVMIV | GLGGNNGSTL |
| 251 | VASIIANKHH | ITWNTK**EGVQ** | **EPNYFGSVTQ** | **ASTVR**LGTNA | NGEGVYIPFH |
| 301 | NLLPMVSPNE | LVIGGWDISS | LNMAEAMKR**A** | **MVLDHDLQR**Q | LVPHLEKIKP |
| 351 | LPSIYYPDFI | AANQADRADN | LLKGSK**QENL** | **DAVR**QQIRDF | KQSNSLDKVI |
| 401 | VLWSANTERF | SDIVEGVNDT | SANLLESIKA | GEAELSPSTI | FAVASILEGC |
| 451 | SYINGSPQNT | FVPGVLDLAE | EKK**VFVGGDD** | **FK**SGQTKIKS | VLVDFLVSAG |
| 501 | IKPTSIVSYN | HLGNNDGK**NL** | **SAPQQFR**SKE | ISK**SNVVDDM** | **VASNR**LLYKE |
| 551 | NEHPDHVVVI | KYVPFVGDSK | RALDEYTSKI | FMNGNNTISM | HNTCEDSLLA |
| 601 | SPLILDLVLV | CELAERITLK | KEGAAEYEHM | HSVLSILSYM | LKAPLVPR**GT** |
| 651 | **PVVNALFAQR** | ECMINIFRAC | VGLAPESHML | LENRLASEIN | ARQ |

 |
| **PITG\_09400** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MSGALGLRQQ | GVELESIMRS | VEGVERKTRI | FCTLGPSCWT | EEGLGELIDA |
| 51 | GMNVARFNFS | HGDHGSHAET | LNRLRAALAS | RPHKNIAIML | DTKGPEIRTG |
| 101 | FLANKDKITI | KKGSTVELTT | DYEFLGDETK | IACSYPELPQ | SVKVGGSILV |
| 151 | ADGSLVLTVT | EIKEDGVVTR | **ANNSATLGER** | KNMNLPGCKV | MLPTLTEKDE |
| 201 | DDLVNFGLVH | GVDYIAASFV | RTGQDIDNIR | QVLGPRGRAI | KIIAKIESQE |
| 251 | GLENFDEILV | K**TDGIMVAR**G | DLGMEIPPEK | VFLAQKMMIR | KANIAGKPVV |
| 301 | TATQMLESMI | KAPRPTRAEC | TDVANAVLDG | TDAVMLSGET | ANGDYPTEAV |
| 351 | QMMSKICVQA | EGAIHYNELY | QALHNSVLDT | YGQMDTQEAI | TSSAVK**TAID** |
| 401 | **INAK**MIVVLT | ESGNTSASAL | GGTARQAEGF | NKGVTARCMG | SMIGTDSILF |
| 451 | RATDLGKQFG | WVKPGDNVVA | LHGMVEARSG | STQHAQGTDC | GINRQRTHQH |
| 501 | AHQGQC |  |  |  |  |

 |
| **S36** | **PITG\_07197** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MTLKNVYIVA | AKRTPFGNFG | GKLKDITATD | LCAHAAKATL | AAAKLDPALV |
| 51 | DMVQVGNVAP | TSPDGAYIAR | HVQLKAGIPQ | EKPALTINRL | CGSGFQSVVG |
| 101 | GVQEILLGDA | EIALCGGAEN | MSQSPLAVYG | HQARFGVGLG | AGLNLQDTLW |
| 151 | SALTDSYAK**T** | **PMGMTAENLA** | **EK**HNITR**EEC** | **DAFGLR**SQTR | WAEAQAAGWF |
| 201 | DAELAPLEVK | AGR**KTEEFAV** | **DESPR**TVDLA | KLAKLKPVFK | KDGVVTAGNA |
| 251 | SGISDGAGAV | LLASEEAVKK | HNLTPLARIV | SYQVSGVDPT | IMGIGPVPAI |
| 301 | TGALKRAGLK | KSDIDIYDIN | EAFAAQWLSC | VKELDIDPDI | VNQSGGAIAL |
| 351 | GHPLGASGSR | ITAHLAHALQ | RTGKKYAVGS | ACIGGGQGIA | LVLENAA |

 |
| **S37** | **PITG\_23273** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MVKLFCAIVG | VAGSAFEVDI | DQTASVSALK | KAIKEENAST | ITCDAKNLQL |
| 51 | FLAKAGGNAW | LSSLTEDVKE | LKKGEKTALV | KSLTQEEKEL | QGEDPLSECL |
| 101 | EDMDPPKVKQ | IHVLVVVPGL | VASTVTIVIE | EAAGSKPMKE | LDYYQKCGAS |
| 151 | IRKECSDYCC | EVLDKIDDIY | DMNELPLPFI | CVEGSSGMGK | SQLAFTLQGS |
| 201 | RPWFYWHATR | VTDASQAMYR | NFKSMSEAFR | KVVEMDDPVA | KPMEDILNCQ |
| 251 | SGIYQTVDLW | TCGFISCLLK | YSKHQSAQMI | HLEQKIEFRV | EMRTAQDVYN |
| 301 | EVKKMKEENG | KQLPFFILDE | MTPNARTSVG | GKSVAAFQRN | IFRTCGLVVI |
| 351 | VMGTDSKISN | LVTQATGSST | GKHMWMSVVP | KFPPYRFVFD | PKDQRDQEVW |
| 401 | EAAVDWFPVV | EYIAVNSRGR | FTRSFVGEIV | KVLKRAAKQT | GDGEYSTTDQ |
| 451 | VLKGSTTLSD | LDTSLALSRV | ELWNLLDEAF | AGVSRGSQIG | EVGKAFMDEK |
| 501 | DGRYAQLMAI | SYTNAEETDE | EPPLKKRRLL | VGAESMHLHF | ANLVDEKVTD |
| 551 | VIISNGELNM | EPRTTGPLIP | WAPQCCFPQM | DKDVLLYLAI | LGGKTHSGYY |
| 601 | QYTRGGVAHS | TKFIFSETGA | FPVHENKNAV | SNEYKTYENM | VAHALFCSSR |
| 651 | RHGVQGISFD | DFLECLVGEF | RDKIWEKVIL | KDLSGAVCRA | TELLASYEQR |
| 701 | IRDLSTRTMP | FVAPPNAEWP | QPIIDMNVRG | CEFGHLIRAP | NSERCDIFLD |
| 751 | DLGNSNERAM | FLCECKYRGD | NVDMGVLKGI | VAGLNQKWDW | KIGMLFCPQL |
| 801 | ANVRAWTVPD | VDCMKIDCKT | **GNVKWVHRPN** | **AERGAPKVII** | **VIETGRGGGV** |
| 851 | **VG** |  |  |  |  |

 |
| **S38** | **PITG\_16048** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MARTYLIGGN | WKCNGTVQSV | K**DLCALLNK**V | EITSDKVEVI | VSPPALHIDL |
| 51 | AKSLLQKKIA | VSAQNVSLTG | TGAYTGEIAA | EQLVDFGLEW | TITGHSERRA |
| 101 | YYNETDEIVA | KKTKRALDLG | LKVIFCIGES | LEEREGNK**TM** | **DVLIR**QTQAL |
| 151 | ANIVTEADWA | RIVIAYEPVW | AIGTGVVATP | AQVQEAHKDL | RGWIAGK**VSP** |
| 201 | **EVAENVRIIY** | **GGSVK**GDNCE | ELIALADVDG | FLVGGAALKP | EFEKIIKSAF |

 |
| **S39** | **PITG\_12486** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MVKSDVYSSP | IVFSQLDLRV | GKITEVKAHP | NSERHYIETV | DIGKGEELEM  |
| 51 | VMEHQPYFAE | EELVDRKVVV | LCNL**KMVKVV** | **RTRSTGAILL** | **VANDK**GKVEL |
| 101 | LDPSPEAEIG | ERVYASGEEL | QDPVTPIQMK | KNKVWEALCK | DIKTNNKCEI |
| 151 | TYLDRYPVRS | RAGPVRVESL | KKVFVTK |  |  |

 |
| **S40** | **PITG\_00160** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLLCLCHERS | RQSIKPRKSD | RSSRSLSIIR | TPKVPNASNG | KTSASSNEVP  |
| 51 | ASPVPPLMRL | LVKMTSATFE | RAKGASGIEF | DVSRDGYGCL | QIPDINARCA  |
| 101 | SSTEPATTPS | LSTFSHSSKV | WPPPDGYSVM | AWFR**LDSLER** | **KDDRERLYRE**  |
| 151 | **CFMSNTCIHC** | **RNKIQDECVL** | **KCSHRACRGC** | IEALLNSGGE | CVVCNPPMFY  |
| 201 | LFRFRSSDGN | SVSEAFLKGG | KLYMRTSSNR | ASAYQFSHTP | IATKQWHHVV  |
| 251 | FTHARQRFQP | SMVSCYLNGV | LQEHVKISYP | SGITGSQPLS | GLLGVPSQAR  |
| 301 | RCSSAKWMLG | PFYLLDLPVS | PPVVNAVFAA | GPSYDRLFFG | ATGNNEIGVT  |
| 351 | FDHLNIPNMV | MLDSYMWDPV | RSLIDSVDVE | RGGRNKLLRR | SLSLASAASS  |
| 401 | TAAAIVQDIK | SSSNVFARIP | SAAPLVHIPI | PSERIVVTYS | ARNGVAKELS  |
| 451 | MVPSSKLDGR | PSGHLMGGAT | LCEAATMADA | MFDIRSSGCQ | VAYGLLDEAS  |
| 501 | TAEEVELALD | LLRLCMQSNF | RNLAAMEHDH | GYGVVNYLLH | QKASLLSAQC  |
| 551 | LQTLFRIVGV | DFELDAPARQ | SGIEAHPSRD  | SAIRNVQALQ | YFILDYSLWQ  |
| 601 | KVPGTDTARL | LFSTLYSCLA | RAQLQSMSFI | RQLLYVLMDP  | ADDEAIRERN |
| 651 | TVTDGVSRVV | VDVILVCLTS | PSRDSIVESN | FSDVTSFLAA | TLSPRFGRYR  |
| 701 | SEGVDDEVSV | EVFKSHTLAS | PTGRLCLSPR | GSQRMDGNTW | SEPNDREEKP  |
| 751 | GPTKVANAQL | ISHQAKIQEL | LLDTLVKAVH | KLDVKESREF | GEDLDKRGSD  |
| 801 | ASSGGPLKSV | TSSSTSSSGA | ARMQLPSASR | LTGFRKYLGM | RWIEYFLFPG  |
| 851 | DETEFSLRVT | PSTINAALRL | LCTLLGNSRY | ESVFKKEGYY | RLLAQGLPCN  |
| 901 | HAMFTTAAVN |  QRFPFQKMWF |  TLFGALLGTP |  VDGVPAAIRL |  EIDYLRKDFE  |
| 951 | VNIQRDRVVN | FSILNVIMVL | LRRHFNDPMA | MMSSAGDTSM | VTFVDFDAET  |
| 1001 | KHSTVLTPST | EQA**DIYQVEV** | **LDFLQHIF**EN | **MPSLHSF**VIS | GAEKMRQEFM  |
| 1051 | EELTRLICAA | ARAYLIEQYP | HSQAEVSKVL | EDKQVAVTEY | NIVVCRAELA  |
| 1101 | EEAAAVDSNG | SDPFLHHPVA | ASGLRLLIAQ | LMKLLLEAPN | GSDVIEEYVD  |
| 1151 | GTANSAVVLP | PLNSGLVLRF | QSLVVMGLLD | HVRAKFDDDD | IVAKHKHFGA  |
| 1201 | NVREFVKFVV | AKMHSWQHPQ | HGDGCPAVFA | CCGAAHFVGG | PSRLLEMVLF  |
| 1251 | VLADAHIGAC | GVNGSGLSSL | STPSSFGGML | SEKLSKGKKR | KPFRQLMDRM  |
| 1301 | TRSVELDTLV | SELYIALNAV | ILHVFHGRGA | EVGDEELEAM | LQQIHLHRDV  |
| 1351 | VFGSQSSHDK | RFLGCLCRYL | LQLLSDANVR | PLQEAAAHLW | IDLMLFQRSF  |
| 1401 | IDDLLTVEIR | KSGAPPYSVN | LMKNGFDVLL | ECADAPAEKR | IVQSSSFATF  |
| 1451 | SKWLELVGPP | LKELEGNLDR | IYIHFVVETK | EAVHETWTAY | HKKANHRKSK  |
| 1501 | YEKQFDARYD | WFVSMENAYI | ESLLRSQQNE | FRRQLKWEQD | RVDRQKFIAN  |
| 1551 | RSRYDLESSS | PRRYSWRLDF | TEGPYRMRKR | LTQMAQTLEP | SCRPGLLQRR  |
| 1601 | CSESDVNLRT | VSSQAKSCKT | AEPLAKRQQF | DESETGNTRQ | PATKRAFATS  |
| 1651 | ASSSAVLSSR | ERLRKGSFEA | LFTKYVKNER | RPSQSFRFNR | LSAGHDSIVE  |
| 1701 | HDDHEEEKAG | DVSGVESSAV | FESAVNSGGV | AMEDVVDEKL | RPLLMPGDEI  |
| 1751 | IAIYDCLRID | GMDSSPGVFL | LCNDHVYIVD | NYQRQSQPFV | SSHNDIGSEH  |
| 1801 | NSQTRVTEVP | QGSTTLLERR | LSWRLHESPH | HSQSVARSRD | THQCRFWAYE  |
| 1851 | DITELHKRRY |  QLRHVALEFF |  ANDGRNYLVT |  LESLEQRELV |  LHALLAKCPN  |
| 1901 | VQGAASGLDG | VSGGGDLYSQ | LRKLLRNSMT | ERWVQGDISN | FAYLMHLNTL  |
| 1951 | AGRSYNDLTQ | YPVFPWVLAD | YDSEILDLSD | PIVYRDLRKP | MGALQREEEF  |
| 2001 | RARYDGLLES | LGVADDAASD | HALSSRPFHY | GTHYSSAAIT | LHYLMRLEPF  |
| 2051 | TSHFRRLHGG | KFDHADRLFT | SIVGAWKSAA | GFEGAQNGTQ | DVKELIPEFY  |
| 2101 | YLPEFLENVN | ACVFGTSQTG | VVVGDVELPP | WANGSPTEFV | RLNRAALESP  |
| 2151 | YVSANLHHWI | DLIFGYKQQG | PAAVEACNIF | YHLTYEGSVD | LDAITDASTK  |
| 2201 | RAILDQITEF | GQTPSQLFRT | PHPVRAVAAS | TSGNIATNSS | LFGGSLGPSS  |
| 2251 | GPSYAQGESG | DGRRVATSPL | TARAALASSF | LEGGEIISRM | QTMLSSGPVL  |
| 2301 | SGTFVGTTEA | TFSPVLETSA | LLQQEPRRQV | PVNPLLAFYR | RGQQGSTSGS  |
| 2351 | NTNIHNIAWT | SGGVAREEKV | VVAGPKCLLI | PPRNNEYLAW | GFHDQSVKVV  |
| 2401 | STSSAEIGGH | GSESKVIACL | ELDVEIDVAT | ITTDGRIVIT | SSPSLPVLRV  |
| 2451 | **WRFNSTRRSL** | **AASLAAASGS** | **SSASATSSSA** | **AAVATSLAAA** | **SALSAPHRRR**  |
| 2501 | **TYTTMP**SSTR | SLTLMGSVST | PMHRNRITAL | QASRAYSVLV | SGCAGGVAVL  |
| 2551 | WDLNRRRFIR | QLPPICGQDD | TRVRGITTIC | INEVTGDIVV | AAGSTFGVYN  |
| 2601 | INGVLRVRLD | DSVVVRANGV | LRST |  |  |

 |
| **S41** | **PITG\_20172** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MVKLFCSIVG | VAGSAFSVEV | DEGKTVDDLK | EAIKAKKAND | FKEVDADKLQ  |
| 51 | LFLAKKDEGR | GPWLTEEEVK | KDVIDTTGLK | LLGAARARLR | RVGLSDVDVG  |
| 101 | GVDEDEEVEG | RGPVNVLVVV | PEQDGTISKE | MFAATTPLTL | EQVEMSMNKV  |
| 151 | LRERDEKASA | YSFSDLNTAM | EEQIVKKMRL | TENIPDVKEP | VDTSIAGYSW  |
| 201 | IPKIVESEES | QRAGYMAYLQ | QHLKTLMDRG | DFLLDDIAGD | KSVLNIVDPR  |
| 251 | LPFAMKGTAD | VLLINRTSKN | PLIKLAGVSL | VIELKKKVEP | GHVPQAIGQL  |
| 301 | VLCSMKAPLN | CYPLSLLTDL | NDHWHFSWFS | DKHVLTQLTL | KYPKNAFRFI  |
| 351 | EAAVLGRTES | APPPPSFMPG | SFKIIKVDDF | LPQPVDARAE | **EMMKRYELMA**  |
| 401 | **DVVEPEFLMA** | **RRMDYARQLV** | **QSMP**MYSYMY | T |  |

 |
| **S42** | **PITG\_00827** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MAARFLNRVA | GIGATIGFGG | FCLQECIYDV | DGGHRAVIFD | RKDGILDKSV |
| 51 | GEGTHFKIPF | FQYPTILDVR | SNYRLISSRT | GTK**DLQNVNI** | **SLR**CLYRPNA |
| 101 | DKLSHIYAEY | GPDFADR**ILP** | **SVGNEVLK**SI | VAQYDAVELL | ARRDQVSIQI |
| 151 | AKEMNDRCRN | FFLLLDDVSI | THLEYGPEFT | RAVEQK**QVAQ** | **QDAER**QKFVV |
| 201 | MRSEQERKAA | VIKAEGESEA | AR**LVSDAVSK** | SGSGFIEVQR | IDAAR**EIAET** |
| 251 | **LAK**SRNVTYL | PNQEGGNGGV | LLGLQ |  |  |

 |
| **S43** | **PITG\_14221** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MGQDSAYVVV | LYYKYVRLCE | TREELKAFAA | AHDQLCSSLG | VTGRVRLALE |
| 51 | GINGTLGGSS | ANVQSYIDTM | KQQPQFADVD | WKTSSSRVEP | FPELHVRVVA |
| 101 | EIVALELPDD | AYDLSLRGKH | LTPEQFRSEQ | LSSDAESIAL | IDVRNTYEFN |
| 151 | VGHFEGALNP | KTRRFGQFPQ | WVRDELPMLQ | QKDKVLMYCT | GGIRCEKASA |
| 201 | YLKHLGLENV | YQLEGGIHRY | LERFPDGGGL | FQGKNFVFDQ | RVTVASEDKT |
| 251 | VTGQCERCQV | PHDTLPGTRC | AYCRMHVLLC | ESCRESAKAR | GETDEDVFCD |
| 301 | EHSPLVSGSL | GDLETRFEVL | QDSLSNEQGR | GKKGRRRSLR | K**QLDTVERR**I |
| 351 | QRLATA |  |  |  |  |

 |
| **S44** | **PITG\_10334** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MRRSALRRPE | SLTDKYRILG | KIGEGTYGMV | FKAESHSAAL | LPRPTSGGSN |
| 51 | AVEDEEPMTF | AIKLVKSHKE | GKNDVVLSSA | TVREIKLLRE | MHHDNVMHLH |
| 101 | DVHVDPRDKS | LALVFEYGDH | DLHDIIVQSK | QKPL**GEYTRK** | **SLMYQILK**GV |
| 151 | DYMHDVWVMH | RDMKPQNILV | VGHGRKRGQV | KLGDFGLARI | FKEPIKALSD |
| 201 | VERVVVTLWY | RAPELLLGAK | HYTKAVDLWA | VGCIFVELIN | TRELFCGKEV |
| 251 | EGSNAPFQKD | QLDKIFKVLG | MPTPQTWEGL | ENLPEYNHVV | QMGRERKYPT |
| 301 | QSELKNAVKV | GPGRAGAALL | DLLSRLLEYD | PITAKEALEH | EYFKEIVRSL |
| 351 | VCLFRGLV |  |  |  |   |

 |
| **S45** | **PITG\_01470** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MATRDVTRQF | LQLRAEEKAK | VLRRKNIVSH | REEGNALIKS | ADQESTSVAI |
| 51 | APGWVDVVNG | TNQHVARIK**E** | **MMEKLNK**LHT | SRLMVRFDGQ | ESKYEREIDQ |
| 101 | LTQDITDEFR | SAEKGLRRMA | QSDRDGEFSA | ADAKTRQNVQ | RALATQLQTL |
| 151 | SGDFRKSQKT | YLARVKNQKE | GPVEFDFLAE | NDAKQKRRGG | ADTGFTQAQI |
| 201 | TEVEIAEDVI | NE**RDQEIQRI** | **ATSI**TELATI | FKELAVLVID | QGTILDRIDY |
| 251 | NMEQVVEQTE | KGIEELEKAE | ETQKNSRPMK | CIGLLLVLIF | AMTLLLVLKH |
| 301 | S |  |  |  |  |

 |
| **S46** | **PITG\_17907** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MVANNANSSA | NNGTCPTAAW | HPPTDAESTT | FRHQTSLPKL | PIPDLEGTCQ |
| 51 | RFLASVKALQ | TPEEQHQTER | SVK**EFLASDG** | **PR**LHQQLLDY | DKDKHSYIED |
| 101 | FWYEAYLNHR | SSVVLNVNPF | FVLEDDPTPS | RNNQLSRAAS | LVLGALKFVN |
| 151 | ALRRGTLEPD | MWRGNMALCM | HQYKRLFGCA | RVPSDGADDV | MVDELSKHIV |
| 201 | VVCRNQFYWF | DVIWEDGVTA | ITERELLANL | KAINEDALKT | DDVEAASNAV |
| 251 | GVLTTERRAK | WANLRTKLQA | KNKDTLAVID | RALFLVCLDT | TSPPDAAAFA |
| 301 | ATALHGTYSI | TKDGVQTGTC | MNRWYDKLQL | IVCENGVAGC | NFEHAFVDGH |
| 351 | **TVLRFVSDVF** | **TDTIIRFAQT** | **IRAGNYA**FLE | ASYRAPQLSP | SDTPGRPRVQ |
| 401 | PHKLEWELDH | ELQEGIKFAE | AQLTDLMLQN | EVKVLEFTAF | GKLFITQHNM |
| 451 | SPDAFVQMAF | AAAYYFQYGS | APCIYEPVLT | KRFLHGRTEA | ARAMTADALE |
| 501 | FVETFFSEKT | PLEKIGSLRK | AISTHVANVR | DCAGGKGPER | HLYALECLWQ |
| 551 | HEKAADNSKP | TPALFADDAW | CKLNHSVLST | SNCGNPSLRL | FGFGPVVPDG |
| 601 | FGIGYIIKDE | GIQFCASSRH | RQTERYLKNL | ESYLLRVQDL | LMYEEEIRFP |
| 651 | HSTAAKKKAV | QSTFKGYGFF | DDGGQPTEVK | ALASIGAVGK | PLV |

 |
| **S47** | **PITG\_03685** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLPSRLSSFV | RRCASTSARN | SFVDRLRNEL | AEIEAAGTYK | NER**VIASPQG** |
| 51 | **AK**ISVNGDTV | LNFCANNYLG | LSNHPAVEKA | AADTLKERGF | GLSSVRFICG |
| 101 | TQDIHKQLED | AISAFHGTED | TILYPSCFDA | NAGLFEAVLN | KEDAIITDEL |
| 151 | NHASIIDGIR | LCK**AERHRFK** | **HMDMNDLEQK** | LKDTQHCRTR | LIATDGVFSM |
| 201 | DGDVAPLQDI | MALAEKYDAQ | LFIDECHATG | FFGPTGRGSD | EYCGINGKVD |
| 251 | VINSTLGKAL | GGSTGGYTTG | RKEVVDLLRQ | RSRPYLFSNS | LGPSVVGASL |
| 301 | KVFEMLTESS | EFVDKIRANT | HHFRDR**MTAA** | **GYTLK**GSRDH | PIAPVMLGDA |
| 351 | RLASELADDM | LKRGIYVIGF | SYPVVPKGQA | RIRVQLSAAH | SIEDVDKAVD |
| 401 | AFIECGKARG | VIN |  |  |  |

 |
| **S48** | **PITG\_06595** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | MLSRVGLTAM | RGARSMATDA | KKVTGSVGQI | TQIIGAVVDV | QFKDNLPPIL |
| 51 | NALEIKTQDN | TRIVLEVAQH | LGENTVR**TIA** | **MEGTDGLVRG** | **QECVDTGNPI** |
| 101 | **MVPVGPETLG** | **RIMNVIGESV** | **DER**GPINAKR | HAPIHTSAPL | LTEQGSGAEI |
| 151 | LVTGMK**VVDL** | **LAPYAK**GGK**I** | **GLFGGAGVGK** | TVVIMELINN | VANNHGDQRR |
| 201 | RHDHGSK**AAL** | **VYGQMNEPPG** | **AR**ARVGLTGL | TVAEYFRDVE | GQDVLLFVDN |
| 251 | IFRFTQACSE | VSALLGRIPS | AVGYQPTLAT | DLGALQERIT | STKKGSITSV |
| 301 | QAIYVPADDL | TDPAPATTFS | HLDATTVLSR | **QISELGIYPA** | **VDPLDSK**SRM |
| 351 | LDPR**IIGQEH** | **YDVAR**ATQK**L** | **LQDYK**GLQDI | IAILGMDELS | EDDKLTVARA |
| 401 | RKVQKFMSQP | LHVAEVFTGK | AGK**FVPLTDT** | **ISSFK**DIIAG | NYDDLPEAAF |
| 451 | YMVGGIEEVK | AKAADLAAEL | DE |  |  |

 |