

Aspergillus niger:

**An02g02340**

MSNRFSVYSSHSTGVSSARPSAPSTVTTTTLLNALHAYNSGQPYQLDAGTSLVVNTWVTATRANANGQEGGTIDR  
DLALRAWEHARRRAEDGCIVLCSTHQSTPSIFEPFLTALPLTPNIAFTALTALRPFLSAVTSFNPSYSLSALSARYSINLK  
GDVVGLSLALSTSGINVRKGLLDIPTEAGYRAFDVFYLLASISTPAEREFNLK DASSYALLSKSGTYTPPAYLPAADDA  
AAAEDFRAALKSIGKGAQRGLLSTLAGLLKLNATGFLVDQEDLEEACDEVGGLLGLDPEVLLHSCSTDDREVLISGI  
YEALVDWVIEKANEAISSSELQAILDNDPSTSGGSGPGGQWTD DDTVSITVVDIPR PALGKAVAVRNVFDDNAGINAE  
MKEDGVTVPVGHAIANDVSSAVAQVEADL GITTGSAWHEREYELGKRQEVLEKVGLEVDMD SFLRKL LLLPVEAEGI  
TVGKRGRFDLPTTLGSSRVWHHISVHPTDDL PETLSTFTPTAAWSAGVVS RQLREWR LAEWANRRRLQLDFTADFD  
MDEFVGRYYRLGCAEGRDGVESWLMERGW TNGDAFVGHQRIWMRESAWWEAETMLDMKPEEPATANPFLYG  
NTMLDAGMPHYAGTPMAESTSLLGSRD LLNHRQSTLAPSFHGGAKSIAPSV PQLTNMGGDYGLGSKGDTRKWD  
NPYSDEYAHYNNGELDPEVGD PKHIEKKPITQGRRIWVGFVWALT FWIPSFALRWIGRMKRPDVRMAWREKLVLM  
LIILLFNGVVCFYIIAFGDLLCPNKDKAWNEK QLSWHALDND FVYSIHGNVYDITKFWRLQHSDSS IETTTSNMKPFA  
GEILDQYFTPLTRFCSPYVTEQSVTLQFNNTNALEYPNAEHYCGSYHTPSTTTKLHNITWYEDIFLPKIKTYKGPLVW  
SKSTVQKQATDSSRYWVIVHDKIYDLTDYFYTAELFND DTYAFLPSSVTDL FKNYAGEDVTDKWQNTTDFQQSQC  
LDYVFYKGVDFRDSRPTVNNWILLSFTVLICAVILVKFVSALQLGSKRRPAPQDKFVICHVPAYTEGEDALRKG LDSL  
TALQYDNKRKLIFVICDGMIVGGGNDRPTPKIVLDILGVD PKVDPPALPCMAIGQGSEQLNYGKVYSGLYEYEGNVV  
PYIVVVKVGKESEQRPKPGNRGKRDSQIMMMRFLNRVHHRAPMSPLELEIFHQINNVIGVDP ELYEYCLMVDADT  
SVREDSLNR LVAACANDARIAGICGETSLQNEERSWWTMIQVY EYYISHHLAKAFESLFGSVTCLPGCFCMYRLRTA  
DKGKPLIISDKVIEEYADNDVDTLHKKNLLSLGEDRFLT TLMTKHFPEMSYKFI PDAYASTAAPETWSVLLSQR RRWIN  
STVHNLVEVAALKDMCGFCLFSMRVVLVDLLGT VILPATCVYLG YLIYRVASHTGPFPMISIVILAGVYGLQAIIFLLKR  
QWQHIGWMIYICAYPIYNFILPLYSFWKQDDFSWGSTRIVIGE QGNKRVAVDDEGFDPRSVPLQRWDDYALANN  
LPGRRGDFGMSQEKMYGGRYDDMALEMDDMHSNYSSVKPASTILTGFPHHQGRHGS PYPMPQPAPFANTPGN  
RNSHMSSLTRYTDQPFASGHMASRSLGNLSQVPDGMTNRHSVGLMQSTENLLGRPNRSRSPVGGISRPVSAFDFRG  
SGGPDEGAITEAIRACLAEVDLDTVTKKQVRALVEQRLQT TLMGDKRTFLDRQIDHELANM

**An02g02360**

MAGPAPSGRTPSHAQSSLP LPAHLQSDTHLTAHLASRFHVGLPTARLSSQALISLNTYTTSSRGP DGDKEGSAMGE  
AEDLAKRAFTRLGARGENQAI VFLHSSGESGSGKTTIRSHLLS SFLSFSSTPLSSKLSYAAFVFDL TTTTKSVTTPTASKA  
GLFLELQYD GSSSVNPTLIGGKIIDHRLERSRIASVPTGERSFHVLYLLAGTSA AEKEHLGF DSSIHVSTSGGKLSGASIG  
HKRWRYLGHPTQLKVGINDADGFQHFKTALRKLEFPRSEIAEFCQILATILHLGQLDFVSGQATTTTAEESGGYSHEG  
GETVTVVKNKDVLSVIAAFLGLGVEELET SFGYRTKTIR RERVTVMLDPK GARQNADGLARTLYSLLVAYIFEGINQRIC  
AAEDSVANTVSILD FPGFSQASATGSTLDQLLSNAATESLYNFCLQSF FERKAEMLDREEVTPATSYFDNSDATRGLL  
KSGNGLLSILDQTKRGR TDSQFLESVKKRFENKNPAITVGSTGQG TLLISQGARS AFTVKHFAGEVDYPVQGLLEEN  
GDVVSGDLMLNMRSTSSDFVRDLFGQEALQTVTHPQERTAIMQAQVSSKPMRMP SMARRKAGPSRLAFDAPEG  
DDQDEYDSQAGSMSKSSARRKSTMLANGMQGAAGQFLSSLDIVSKCLNSANLNPYFV FCLKPNDRRIANQFDSKC  
VRAQVQTFGIAEISQRLRNADFSIFLPFAEFLGLAEIGNVVV GSDKEKSEVVLDEKRWP GNEARVGSTGVFLSERCWA  
DLAKLGERVVPVFP AEGSDEGGDNLHARAGGYADSKVRLLGPTDQSPGGFIYGEDGKQGYSSSREFDGRSDAGAS  
AFNSGDMFRNLDTREQMLEK GNEKKMEEVDEAPVSGSRKRWMAIVYLLTFYIPDFLIKTFGRMPR KDVRVAWREK  
LAINLIWFSCAFAIFFIVAFPG LICPTQHVVSTAELSSHNGKDG HNSFVAIRGIVFNLDKFMPSHYPDIVPEKSLK KYAG  
TDATGLFPVQVSALCPGKDG SIDPTVLLDYSSTNVSGSATTVSTSDTNWVYHDFRYFTNDSRPDWFQEQMIM LKAN  
YFKGWIGYTPTYMKT LGDKSQYIGSINGRVYDLTTYVAGRRVQAPV GKSVPANVDRDFMDDL VVELFQRLPGQDL  
TKYWEDLQISDVMRERMQLCLDNLFFVGHVDTRNSPRCQFARYFIL AISIFICLIVVFKFLAALQFSRKNLPENLDKFI  
CQVPAYTEDEESLRAIDS MARMRYDDKRKLLVICDGMIIIGQGNDRPTPRIVLDILGVPESVDPEPLSFESLGEGMK  
QHNMGIKISGLYEVMGHIVPFLVVVKVGK PSEVARPGNRGKRDSQMVLMRFLNRVHYNLPMSPMELEIYHQIRNI  
IGVNPTFYEFILQVDADTVVAPDAATRMVSTLLADTRILGVCGETALSNAKTSMTMIQVY EYYISHNLVKAFESLFGS  
ITCLPGCFTMYRIRSADSGKPLFVSKEIVEAYSEIRVDTLHMKNLLHLGEDRYLTTLLIKHHPKYKTKYISAAKAFTIAPES  
FAVFLSQR RRWINSTVHNLIELIPLNQLCGFCCFSMR FIVFVDLISTIIQPVTVA

**An03g06360**

MEDAHDQSSRPLSFELESNHSLRQLTPPICTSYPNENEDVVSQSLLPAPLNDRYPPISSQWPPGTIQQNPSEDPHQ  
QTESEVASQTSWQRRQTTKSGSGLRRYPTRRINLVQGSVLSVDYPVPSAIRNSVEAKYRDSNDATAEEFTHLRYTAAT  
CDPDDFTLRNGYNLRAAMFNRHTEILIAITYNEDKVLARTLHGVMQNIIRDIVNLKKTQFWDKGGPAWQKIVVCLI  
FDGIGPCDKNTLDVATVGIYQDGMKHDVDGKETVAHIFEYTTQLSITPSQQLRPQVDNPDNLPVQMIFCLKQK  
NSKKINSHRWLFNAFGRVLNPEVCILIDAGTKPGHKSLALWEAFYNNKHLGGACGEIHALLGPRWEKLVNPLVAAQ  
NFEYKISNILDKPLESAFGYVSVLPGAFSAYRYRAIMGRPLEQYFHGDHTLSKKGKGGIEGMNIFKKNMFLAEDRILCF  
ELVAKAGYKWTLVYKASKGETDVPEAPPEFLSQQRRRWLNGSFAASLYSVMHFNRIYKSGHNLLRLVFLHVQLVYNIC  
QLTMTWFSLASWLTTSVIMDIVGTPSATIKNKGWPFNGDASPIVNNIIKALYLAFLMQFFLALGNRPKGSQTSYILT  
FLYFAIVQYLILSYLVAQAFSGGNIDLDFDNGAGGFVGSFFTSTTGLVLIALVSTYGTYYIIASILYCDPWHLTSSWAYFL  
GMPLTINVLNVYAFCNWHDVSWGTKGSDDTASLPSAKTMKSVTQKSFVEEVDKPQVDIDIDFECTVRRALSPWQE  
PKEKKEVQLEDSYKFRTNLVLWTLNGLLALLINNSVRNLCLETTSTDRATAWYFKVILWATSGLSVFRFLGALWFL  
GKTGLLCCFSRR

**An07g05570**

MSYNRLGDPYGEEDSHTPMMNPHHLDARSPSPGRPLNAYQLSDNPYAPREHLEMPSSDRLAEQPTYSVERLPNSY  
GHNEVYEDHHPNAYPGYEYSLDPEAHHDAYYTQPYQPAVTPHEDYDLGQYPEHQSYTDDRVPILQPDNPFQPD  
PYADEYEEETIAPTSPAPVRRWKTVEVQLFNGNLVLDCEIAPALLSQVPHAEPGRDEFTHMRYSAATCDPADFF  
EERFTLRQKLFAPRHTELFIAVTMYNEDDFLARTMIGVFNIEYMCRTSSKTWGKDAWKIVVCVISDGRAKINP  
RTRAVLAGLGCYQDGIKQVNGKDVTAHIYEYTTQVGLKGGQVSLKPRTGCPVQMIFCLKEKNQKINSHRWF  
FQAFGRVLDPNICVLLDAGTRPGKDSIYHLWKAFDVDPMCGGACGEIKVMLSHGKLLNPLVAGQNFYKLSNILDK  
PLESAFGFISVLPGAFSAYRYVALQNDKNGQGPLERYFLGKMHGANAGIFTANMYLAEDRILCFEIVSKRNCRWLLR  
YVKSNGETDVPDRMAEFILQRRRWLNGSFFAAVYIAHFYQIWRSDHSFMRKFMLFIEFIYQTINMLFAWFGIGNF  
FLVFHILTAYLGDDLLGTGKVLGVVFEWLYLATLVTCFVALGNRPGGSNKFYMTMVYFWIGIMIYLAFAAVFVTV  
KSIQSQVQQNGFTFSDLFNTYQFFSIIVSLGSTYVMWFLASFIFMDPWHMFTSFIQYILLTPTYINVLNIYAFCNTHDIT  
WGTGDDKAELPSANLKPGGKVDVNIPQDDGDLNAQYEAELAKFANKPPKEENIVSEEDRQADYYKGFSAVVLV  
WVFCNFALAAVLSAAGLEEFSSDQETTENTRATIYMAVVLWSVAGLSLFLKFLGAMWFLTVRMFRGV

**An08g05290**

MAEELVPEVLVAVPTRDYIRRPITGVFEFSQSSWPFSSRCVGEVLGIFLPVMIAILPLPPQITQYFPHQLVSVLQWFAF  
WAFSALLIIPWLCVNRVFIHSLGRTRKRVKEALDDRTAPKTVIVMPVYKEDPVVLIKAIDSVVNSDYPSYCIHVFLSYDG  
CNIDEPYLQVINHLGIPISLESYPQSIDVTYQGARITVSRFKHGGKRHCQKQTFRLIDKVYADYLKHHDDLFLFIDSDCI  
LDKLCQNFMYDMELKPGSQHNMLAMTGIITSTERNLITVLQDMEYIHGQLVERTVESGCGAVTCLPGALTILRFS  
AFRKMARYYFADKAEQCEDLFDYDGKCHLGEDRWLTHLFMIGAIERYIQMCTSAFCKTEAVQTFCSLLKQRRRWFL  
GYITNEVCMLTDVRLWKRYPLLCVRFMQNTIRTTALLFFILAIISITSSKIKNLPVGFIAVSLGLNYILMVYFGIRLKRFK  
AWLYPLMFILNPFNWLYVYVYIFAGQRTWGGPRADAKADEHTTPEEAVEKARVQGDELNVQVDTFRKTKEEG  
VPIRPSKVNGRSLFAPQLPDRYDYQGALGTSKAYLTPDPVPRIGLPHCSSDSVATSDDSGGNSISLPQHVELMS  
AEERAKLYIGSQAQESTGLLHTQEADGGERGLDVQSNEDLEDNRAYEMHTIESGSGIPSGKAPVLSVSPQSGMQQ  
SRAVPGNMSQPHEHLPQPKYTKRPSRIPRQKRRYMQPEQMV

**An09g02290**

MSLPQRPGKASPRREDPYSSFRESSRRRHRTHESAHHNDSSAESPSGHRHHRHRSRSSRRREDVDEERGEVAGS  
RHKKTLSKPERSRVDQSHPHYHYRQKSNMPTQPSTTGDEPLMGAEGEAETNSSQSMQDYKGDVYVTEGNINQ  
PLERLPNRRRIKRRSSRKITRRAAAAERKRQEALEQVRAPSPWTTYCAIITFWAPDFILKCFGMPKKAQRSAWREKI  
GLISLILLVGAFFVGLTFGTATVCGTPPTRLRINEVSSNYMIFHGKAYDLSSHSTHPAAAGIPAGSNVLWDLPHKYGGQ  
DGSFFFQEVNGACKNLITLADGSDVPTNSAGDLAWYFPCAFNQDGSKPNKTVDYLGWACHTSGTARKTFYNL  
KSAGDVYFTWDDTKNTRNLAVYDGDVLDLLEWFNASQVNWPSKFDRENSKVRGVDLTYLQGTQEKRIGQ  
CLSQIIVKGSIDTDTVGCIAKVVLYVSLIFILSIVVVKFIFALLFQWFISARYAAPRTSMDSKTRNQIWDANDIYRP  
GPRMTDHSVVERGTRKASFLPTTSRFSSPYTVSNGGKQYQYVTMASQNSTRLVPGAINSMYKQSHNSSGSGIGP  
DGSRHNVAASRSSLALPGQDSRYSTAMLESEAPGMGGYVHEGVIPQPPPEWQPYGFPLAHSCLVTCYSEGEEGIRT

TLDSIAMTDYPNSHKTLVICDGMIKGKEEFSTPDIVLRMMKDPIIPKDEVQSFSYVAVATGSKRHNMAKVYAGFYD  
YGEDSIPEERQQRVPMVIVKSGTPAEANKSKPGNRGKRDSQIILMSFLQKVMFDERMTELEYEMFNGLWQVTGI  
SPDFYEVILMVDADTKVFPDSLTHMIAAMVKDPEVMGLCGETKIANKKDSWVTMIQVFEYFISHHQAKAFESVFGG  
VTCLPGCFSMYRIKAPKGGQNYWVPILASPDVVEHYSENVVDTLHKKNNLLGGEDRYLSTLMLRTPFKRKQIFVPQAV  
CKTQVPDKFMVLLSQRRRWINSTVHNLMEVLVLRDLCGTFCFSMQFCIFIELIGTLVLPAAIAFTFYVINSIVHKPVQ  
VIPLVLLALILGLPGVLIVVTAHKFVYVLWMLIYLLSLPVWNFVLPITYSYWKFDDFSWDTRQTSEKDKGHEAGEGE  
FDSSKITMKRWRDFEKDRRLRMQMSGWGQAPGPGGYPTYQDPYGGH

**An09g04010**

MAYQGTGNHSPPGYDDGGHRLQDLPAANNYEEEEASRGLLSSQTGPFTGPFDDPQQRNLSPARPTSGYSLTETYAAD  
AGYHDPYSAGGSVYSAQSGENPATAFGVPGRVASPYARSETSSTEAWRQRQAPGGAGSGGGGLRRYATR KVKL  
QGSVLSVDYPVPSAIQNAIQAKYRNDEGGSEEFTHMRYAATCDPNEFTLHNGYNLRPAMYNRHTELLIAITYNE  
DKTLTARTLHGVMQNIIRDIVNLKSEFWNKGGPAWQKIVVCLVFDGIDPCDKDVLVLTAVGIIYQDGVMMKRDVDG  
KETVAHIFEYTTQLSVTPNQQLIRPTDDGPSTLPPVQMMFCLKQKNSKINSHRWLFNAFGRILNPEVCILLDAGTKP  
GHKSLALWEAFYNDKDLGGACGEIHAMLGKGWRNLINPLVAAQNFYKISNILDKPLESSFGYVSVLPGAFSAYRFR  
AIMGRPLEQYFHGDHTLSKQLGKKGIEGMNIFKKNMFLAEDRILCFELVAKAGSKWHL SYVKASKGETDVPEGAAEF  
ISQRRRWLNGSFAAGIYSLMHFGRMYKSGHNIIRMFLLHIQMLYNTFSTILTWFSLASYWLTTSVIMDLVGTSPASNG  
HTGFPPGKTATPIVNTIVKYAYLGFLLQFILALGNRPKGRFSYLAFFVFGIILYVVDALYLVVRAFSGSAPMDFDT  
THGVGAFLGSFFGSTGAGIIIALAATFGLYFVASFMYPMDPWHMFTSFPQYMAVQSSYINILNVYAFSNWHDVSWG  
TKGSDKADALPSAKTTKEGGKETVIEIDKPQADIDSQFEATVKRALTPYVAPVEKDEKSLDSDYKSFRTLRVTFWIFSN  
ALMAVCITSDGVDFGFTNSATDRTSRFFQALLWSNAVVALFRFIGACWFLGKTGVMCCFARR

**An12g10380**

MGTPPYSAHSPRDESSYFSHTSPPHGHQTYHSEEHEHDEQEQLLERNNSSHYGTPFDDPAVSTDSLRRYTLHDD  
GPAVFAAPPYQESAASENTFRARSNGDKASREGSRAGALRRYGRTRKINLVQGSVLSVDYPVPSAIQNAIQPQYRDA  
EEAFSEEFTHMRYAATCDPDEFTLRNGYNLRPAIYNRHTELLIAITYNEDKVLARTLHGVMQNIIRDIVNLKSEFW  
NKGPAWQKIVVCLVFDGIEPCDKNTLDVLATIGIYQDGVMMKDVGDRETVAHVFEYTTQLSVTPTQQLIRPQGNES  
TNLPPVQMIFCLKQKNSKINSHRWLFNAFNRILNPEVVILLDAGTKPGHKSLALWEAFYNDKTLGGACGEIHAML  
GQGWKVINPLVAAQNFYKISNILDKPLESAFGYVSVLPGAFSAYRYRAIMGRPLEQYFHGDHTLSKRLGKKGIDG  
MNIFKKNMFLAEDRILCFELVAKAGFKWHL SYVKASKGETDVPEGAAEFISQRRRWLNGSFAAGLYAIMHFGRYRS  
GHSIIRMFLLHIQMLYNVCQLIMTWFSASYWLTSSVIMDLVGTPTSNKNKGWPWGNEASPIVNNFVKYGYVWV  
LTLQFIMALGNRPKGVKIPYILSYLFSLVQYLVLSFYLVVGFANNGMMDNFDFEGVGTFLSSFFSSGGGIVLIALVS  
TYGIYIISVLYMDPWHIITSSWAYFLGMTTSINILMVYAFCNWHDVSWGTKGSDKAEALPSAQTKKDDDNKQNFIE  
EIDKPQADIDSQFEATVKRALTPWIEPEEEGGKSLDDAYRNFRTVLVCLWVFSNLLVTLITATGVDKMCLTNTSTTRTS  
WYFEVILWITAGLSLFRFIGSLWFLGRSGILCCVSRR

**An14g00650**

MNNSRMYVPAHNQEEPPAYDTYEDPYFTEHESPPAASRAHGATMRLLPSTIVESDLSADTGVSSSEYHYGDPFVD  
DGDYGFVHSDSDSVWYLPYGVELHTNSPLVDMVNAVEIAVWGLRPGD

**An14g00660**

MIYEMMVMKRSANSRAQNNRRSERQRYYPYEPTESPRPVSSLGNVPTIPPPAASTVDVPHYTSRPGSPTRPWSPN  
RVGNWARPPAPPSVASSQYERADLNGSPRPGTSSRYGGSPRRPLPPAPLFSAPGGHDANIPINDAGDDDFVGGG  
GRTIDPNNRASMQSFMSESTIITDEKDAMSKVDLDEMEETDEMVDPNIHYPGPAPEKQSRRGVREAQMSTKEVQL  
INGELILECKIPTILHSFLPRRDDREFTHMRYTAVTCDPDDFTQRGYKLRQQIGSTMRETELLICITMYNEDEIGFTRTM  
HGVMQNIHLCRSKSRWTKDGDGKIVVCIADGRKKVHPRTLNALAALGVYQEGIAKNVNVNQVNAHVVEYT  
TQVSLDPDLKFKGAEGKIMPCQVLFCLKEHNKKLNSHRWFFNAFGRALQPNICILLDVGTKPAPTALYHLWKAFFDQ  
NSNVAGAAGEIKAGKKGMLGLLNPLVASQNFYKMSNILDKPLESVFGYITVLPGALSAYRFFALQND AEGNGPLN  
QYFKGETLHGQDADVFTANMYLAEDRILCWELVAKREERWVLFVKS AVGETDVPSIPEFISQRRRWLNGAFFAA  
VYSIVNAKQLWKT DHS LPRKILLQIEGAYQFMQLIFTYFGLANFYLVFYFIAGSLTDDKIDPFGHHIGKYIFVILRYACILV  
MCLQFIISMGNRPQGAKKLYLSGIIIVYSIIMFYTIFCTMYLVVIEILARTGADTSLEVS DGLFVNIVMSLLSTVGLYFYASF

LYLDPWHMFTSSAAYFIMLPSYICTLQVYAFCNTHDVSWGTKGDNVLNMDLGAARVVNGTTVQIEMPSEQLDIDS  
GYDAALRNLRDRVEVPETPITESQMQEDYYRAVRTYMVSIWMVANVILAMAISEVYGPDAGGTNIYLAILWSVVVL  
ALIRVIGSTTYAILLVQKIVEGKTKFDAGNLANMSHVSGSSGGRSSTALKYGGVSKDKFAEAKWSAKRVAGKAM  
FWRK