File S1. 48 FAD amino acid sequences.

>AglaFAD1
MTESSDELVGNMIPSAAAERNPGTTTNHRILTKSNESKMDAANNQPETEEFVPRIRWPDTIAQLFLHLGCLYGF
ILCLVSAKFYTTVFAFLSIYITGFGITAGAHRLWSHRAYKAKWPLRLLLITLFTITGQRHVYVWALDHRVHHKYSET
DADPHNAKRGFFFSHVGWLILTPHPSVVEKRKAVDMSDLEADPIVMWQKKIYPLLFLIFNIFLPVAIPVYYWNE
TLWNSFWINFNMRFTVTLNIAFFVNSVAHMWGQKPYDKNISPVENLAVSLATLGEGWHNYHHVFPWDYKT
GELGNVYNPSTTFINFFAKLGWAYDLKSVSKSMIARRAKKCGDGSHPQIWGYGDSDIEKEDLEELDKMAEEKTL
LNKEE

>AglaFAD2
MTPKDMKTVIVDSETSDRGRVSAAGKLPADIGTDYSFKRDIVWKNALGFLALHLAAVYGLYLCSYAHTATMLW
MIFVALLSGEGVTVGAHRLYSHKSFKAKFSLRLALILLQTIAGQNCLYIWVRDHRQHHKFSDTDADPHNAHRGF
FFSHVGWLMSKKHPAVIEKGKTIDMSDLEADWLVMFQKEFYKPLYAVFAIALPVAIPVHFWNETYINSFFISYML
RNMVVLNITWLVNSAAHLYGTKPFDKFIMPTESTFVGFVALGEGWHNYHHSFPWDYRAAELGSKYCLTTYVID
FLSYFGLAYDLKSAPYTMIEKRALRTGDGTHQVYGFKKIKMGEIAEVVNEANDEKKYEVEENIIGKGKKIFPEVSQ
RVMAVQG

>AglaFAD3
MAPNISTPTGVLHEYDEEVDTKDIPPEVVETSDRKLELVWKNVIIFTCFHIVAVYGLYLMFTSAKIATSIFAVIMYQL
GGLGITAGVHRLWSHRAYKANVPLRIILTIFNSIVYENSIIEWARDHRVHHKFSETDADPHNAKRGFFFAHVGWL
LCRKHPEIKNKGKDIDISDLYEDSIIVFQDRYYMIVMPLACFIIPTLAPMYFWNETFVNAFCVNIFRYVFTLNATWL
VNSAAHLYGQKPYDKYIYPSEHATVSFFALGEGWHNFHHTFPWDYKSSELGKYNANFSTAFINFFAKIGWATDL
KTVSDDMVKKRVLRTGDGSHGIWGWGDKDQPKEDYNDALITHKEH

>AglaFAD4
MAPNISMPTGVLHEHDEEVVAKVIPPEVVKPSDRKLKLVWRNIILFAYLHAVAVYGLYLMFTSAKIATSIYAIILYQL
GGLGVTAGAHRLWAHRSYKANVPLRIILTVFNTMAFENSVIEWSRDHRVHHKFSETDADPHNAKRGFFFSHVG
WLLCRKHPDVKNKGKGIDMSDLYEDPILAFQDRYYLILMPFACFILPTMVPMYLWNETFVNAFCINIFRYILTLNA
TWLVNSAAHLYGHKPYDRYINPAENLTVSLLALGEGWHNYHHTFPWDYKTSELGKYSVNFSAAFIDFFAKIGWA
YDLKTVSEDMVKKRVLRTGDGTHEIWGWGDKDQPKEDYNDALITHKKY

>AglaFAD5
MAPNISIPTGVLHEHDEEVVAKAIPPEVVKPSDRKLKLVWRNIIIFAYLHTVAVYGIYLMFACAKIATSIYAIILYQLG
SLGVTAGAHRLWSHRSYKANVPLRIILTVFNTMAYENSVIEWSRDHRVHHKFSETDADPHNAKRGFFFSHVGW
LLCRKHPDVKNKGKGIDMSDLYEDPILAFQDRYYMILMPIACFILPTLAPMYLWNETFVNAFCINIFRYILTLHAT
WLVNSAAHLYGHKPYDRYINPSENLTVSLLALGEGWHNYHHTFPWDYKTSELGKYSVNLSAAFIDFFANIGWAY
DLKTVSQDMVKKRVLRTGDGTHEIWGWDDKDQPKEDYKDALITHRKS

>AglaFAD6
LGTILAFCGSFGVTAGAHRLWTHRSYTANVPLRVILTVFDTVAFQNSVIEWSRDHRVHHKFSETDADPHNAKRG
FFFSHVGWLLCRKHPDVKSKGKSVDMSDLYDDPILAFQDRYYMILVLFLCFIFPTLTPMYLWNETFISAFCVNIFR
YIFALNATWLVNSAAHLYGHKPYDKYINPSENLTVSLLALGEGWHNYHHTFPWDYKTSELGKYSVNFSAAFIDFF
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>Dmel1
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YHWARDHRVHHKYSETDADPHNATRGFFFSHVGWLLCKKHPEVKAKGKGVDLSDLRADPILMFQKKYYMIL
MPIACFIIPTVVPMYAWGESFMNAWFVATMFRWCFILNVTWLVNSAAHKFGGRPYDKFINPSENISVAILAFG
EGWHNYHHVFPWDYKTAEFGKYSLNFTTAFIDFFAKIGWAYDLKTVSTDIIKKRVKRTGDGTHATWGWGDVD
QPKEEIEDAVITHKKSE

>Dmel2
MPPNAQAGAQSISDSLIAAASAAADAGQSPTKLQEDSTGVLFESDVETTDGGLVKDITVMKKAEKRRLKLVWR
NIIVFGYFHLAALYGAYLMVTSAKWQTCILAYFLYVISGLGITAGAHRLWAHRSYKAKWPLRVILVIFNTIAFQDAA
YHWARDHRVHHKYSETDADPHNATRGFFFSHVGWLLCKKHPEVKAKGKGVDLSDLRADPILMFQKKYYMIL
MPIACFIIPTVVPMYAWGESFMNAWFVATMFRWCFILNVTWLVNSAAHKFGGRPYDKFINPSENISVAILAFG
EGWHNYHHVFPWDYKTAEFGKYSLNFTTAFIDFFAKIGWAYDLKTVSTDIIKKRVKRTGDGTHATWGWGDVD
QPKEEIEDAVITHKKSE

>Dpon1
MIHIEFIKNEPQNSATEKTMTVAEIQAYPKTRLDMSAFQEKCPMEPPQEKTLEAHDNKSYSGLLPAEVGTDYSFK
RKIVWKNAIGFFALHLAAVYGLWLMVADCYWKTDIWALLVGFSSGLGVTTGAHRLFSHKAYKAPFITRLVLILFH
TLAGQNCLYIWVRDHRQHHKYSDTDADPHNAHRGFFFSHVGWLMSRKHPAVIAKGKTIDMSDMQADWLV
MFQKQHYKVLYAIFAIFLPAVVPVYSWGESWWNSFFVAYMFRSVLVLNMTWLVNSAAHIWGNKPFDKYMEP
VESSFVAFVSVGEGWHNYHHAFPWDYRAAELGSKYSITTFVIDALAYFGLAYDLKSTPYHMVKRRVERTGDGS
HPIFGPHAEKLESTGKLDDVDIADIVKSKEVGLVRRLPTAQG

>Dpon3
MDFGIMKTMTVAEIQAYPKTRLDMSAFQEKCPMEPPQEKTLEAHDNKSYSGLLPAEVGTDYSFKRKIVWKNAI
GFFALHLAAVYGLWLMVADCYWKTDIWALLVGFSSGLGVTTGAHRLFSHKAYKAPFITRLVLILFHTLAGQNCLY
IWVRDHRQHHKYSDTDADPHNAHRGFFFSHVGWLMSRKHPAVIAKGKTIDMSDMQADWLVMFQKQHYKV
LYAIFAIFLPAVVPVYSWGESWWNSFFVAYMFRSVLVLNMTWLVNSAAHIWGNKPFDKYMEPVESSFVAFVSV
GEGWHNYHHAFPWDYRAAELGSKYSITTFVIDALAYFGLAYDLKSTPYHMVKRRVERTGDGSHPIFGPHAEKLE
STGKLDDVDIADIVKSKEVGLVRRLPTAQG

>Dpon2
MTVAEIQAYPKTRLDMSAFQEKCPMEPPQEKTLEAHDNKSYSGLLPAEVGTDYSFKRKIVWKNAIGFFALHLAA
VYGLWLMVADCYWKTDIWALLVGFSSGLGVTTGAHRLFSHKAYKAPFITRLVLILFHTLAGQNCLYIWVRDHRQ
HHKYSDTDADPHNAHRGFFFSHVGWLMSRKHPAVIAKGKTIDMSDMQADWLVMFQKQHYKVLYAIFAIFLPA
VVPVYSWGESWWNSFFVAYMFRSVLVLNMTWLVNSAAHIWGNKPFDKYMEPVESSFVAFVSVGEGWHNY
HHAFPWDYRAAELGSKYSITTFVIDALAYFGLAYDLKSTPYHMVKRRVERTGDGSHPIFGPHAEKLESTGKLDDV
DIADIVKSKEVGLVRRLPTAQG

>Dpon4
MAPNIQSAPTGVLQEGDEEIISVVKPSRDDKPTPRKIQLVWRNIIIFAYLHAIAVYGFYLMLTSARIYTSIYAIILYQM
GGFGVTAGAHRLWSHRAYKAKWPFRLFLAFCNTLAFENSVIEWSRDHRVHHKFSETDADPHNAKRGFFFAH

MGWLLVRKHPDVIEQGKKLEISDLYADPILRFQHKYYMLLMPIICFVLPVPIPVLLWNETWLNSFCLNIFRYVFTL
HATWLVNSAAHLWGHRPYDQFINPSENIAVSILALGEGWHNYHHTFPWDYKTSELGKYSVNFSTCLIDMMAKI
GLAYDLKSVSEDMIKKRVLRTGDGTHEVWGWGDKDQPREDQKEAVITHRKLT

>TniZ9
MPPQGQTGGSWVLYETDAVNTDTDAPVIVPPSAEKREWKIVWRNVILMGMLHIGGVYGAYLFLTKAMWLT
DLFAFFLYLCSGLGITAGAHRLWAHKSYKARLPLRLLLTLFNTLAFQDAVIDWARDHRMHHKYSETDADPHNAT
RGFFFSHVGWLLVRKHPQIKAKGHTIDLSDLKSDPILRFQKKYYLTLMPLICFILPSYIPTLWGESAFNAFFVCSIFR
YVYVLNVTWLVNSAAHLWGSKPYDKNINPVETRPVSLVVLGEGFHNYHHTFPWDYKTAELGDYSLNFTKMFID
FMASIGWAYDLKTVSTDVIQKRVKRTGDGSHAVWGWDDHEVHQEDKKLAAIINPEKTE

>AvelZ9
MAPNVTENGVLFESDAATPDLALGTAPVEQADDSPRVYVWRNIILFAYLHLAAIYGGYLFLFSAKWQTDIFAYFL
YVASGLGITAGAHRLWAHKSYKAKWPLRVILTTFNTIAFQDSAIDWARDHRMHHKYSETDADPHNATRGFFFS
HIGWLLVRKHPELKRKGKGLDLSDLYADPILRFQKKYYLLLMPLACFILPTVIPVYLWNETWTNAFFVAALFRYTFI
LNVTWLVNSAAHKWGDKPYDKSIKPSENMSVSLFAFGEGFHNYHHTFPWDYKTAELGNHRLNFTTKFINFFAK
IGWAYDMKTVSNEIVQQRVKRTGDGSHHLWGWGDKDHAQEEINAAIRIHPKDD

>OnubZ9
MAPNIKDGADLNGVLFEDDASTPDYALATAPVQKADNYPRKLVWRNIILFAYLHLAAVYGAYLFLFSAKWQTDIF
AYILYVISGLGITAGAHRLWAHKSYKAKWPLRLILIIFNTVSFQDSALDWSRDHRMHHKYSETDADPHNATRGFF
FSHIGWLLVRKHPELKRKGKGLDLSDLYADPILRFQKKYYLLLMPLGCFIMPTVVPVYFWGETWTNAFFVAALFR
YTFILNVTWLVNSAAHKWGHKPYDSSIKPSENLSVSLFALGEGFHNYHHTFPWDYKTAELGNNRLNFTTNFINF
FAKIGWAYDLKTVSDEIIQNRVKRTGDGSHHLWGWGDKDQPKEEVNAAIRINPKDE

>PoctZ9
MAPNVTEENGVLFESDAVTPDLAMARAPVQQADSTPRVYVWRNIIAFAYLHLAAVYGFYLLLVSAKWQTDIFA
YLLYVASGLGITAGAHRLWAHKSYKAKWPLRVILTLFNTIAFQDSAIDWARDHRMHHKYSETDADPHNATRGFF
FSHIGWLLVRKHPELKRKGKGLDLSDLYADPILRFQKKYYLLLMPLACFVLPTVIPVYLWSETWTNAFFVAALFRY
TFILNVTWLVNSAAHKWGDKPYDKDIKPSENMSVSLFAFGEGFHNYHHTFPWDYKTAELGNHRLNFTTKFINF
FAKLGWAYDMKTVPDTIVQQRVKRTGDGSHHLWGWGDKDHAQEEINAAIRINPKDD

>HzeaZ11
MAQSYQSTTVLSEEKELTLQHLVPQASPRKYQIVYPNLITFGYWHIAGLYGLYLCFTSAKWATILFSYILFVLAEIGIT
AGAHRLWAHKTYKAKLPLEILLMVFNSIAFQNSAIDWVRDHRLHHKYSDTDADPHNASRGFFYSHVGWLLVR
KHPEVKKRGKELNMSDIYNNPVLRFQKKYAIPFIGAVCFALPTMIPVYFWGETWSNAWHITMLRYIMNLNVTF
LVNSAAHIWGNKPYDAKILPAQNVAVSVATGGEGFHNYHHVFPWDYRAAELGNNSLNLTTKFIDLFAAIGWAY
DLKTVSEDMIKQRIKRTGDGTDLWGHEQNCDEVWDVKDKSS

>HzeaZ9
MAPNISEDVNGVLFESDAATPDLALSTPPVQKADNRPKQLVWRNILLFAYLHLAALYGGYLFLFSAKWQTDIFAYI
LYVISGLGITAGAHRLWAHKSYKAKWPLRVILVIFNTVAFQDAAMDWARDHRMHHKYSETDADPHNATRGFF
FSHIGWLLVRKHPDLKEKGKGLDMSDLLADPILRFQKKYYLILMPLACFVMPTVIPVYFWGETWTNAFFVAAM
FRYAFILNVTWLVNSAAHKWGDKPYDKSIKPSENLSVAMFALGEGFHNYHHTFPWDYKTAELGNNKLNFTTTFI

NFFAKIGWAYDLKTVSDDIVKNRVKRTGDGSHHLWGWGDENQSKEEIDAAIRINPKDD

>PoctZ10_
MPPNSEETVLCEKEDHEKLVAPQAATRKHELAIVPISLFTYWHVAGLYGLYLIFAEAKWQTVVFTLFTYNAGILGIT
AGSHRLWAHKTYKAKRPLETLLMVFHSLTSQNTVRHWARDHRFHHKYSDTDADPHNATRGFFYSHVGWLLV
KKHPEVLRRSKTIDMSDIYNNPVLRFQKNYGLPVITLFAYVLPALIPMYCWEETLNNAWHINLLRIIANLHASCLV
NSAAHAFGNKPYDKHIAATQISTLSFITLGECFHNYHHVFPWDYRTAELGNNWLNMTTLFIDFFAWVGWAYDL
KTASDGMVEARAKRTGDGTNLWGWGDEDLGREEGGEEVFYGWGDRDMKDTSGVRVYSQE

>AvelZ/E11_
MAPNAEDIETNMPETEENWETLVAPQAAPRKYQIVYKSLLTFGYGHLAGLYGLYLCFTSAKWQTIGLAIILHAMA
ILGITAGAHRLWTHRAYKATVPLQIILIIFNSLSFQNSAFTWIRDHRLHHKYSDTDGDPHNATRGFFYSHIGWLLV
RKHPEVMKRGRMTEMSDIYSNPIIMFQKNYAIPFIGTVCFVLPTIIPMYFWGETLNNAWHITVLRYIFSLNCIFLV
NSAAHLYGYKPYDKNILPAENKAASIASFGEAFHNYHHVFPWDYRASELGNITMNWTIYFIDFFAWIGWAYDLK
TASDETIKSRIKRTGDGTDFSGQQIYAR

>OfurZ9_
MPPQGAERDSFVLFESDAKDPDVITHMAPQAEKRQTQIVWRNVAIFTYLHLGFLYGAYLMLTTVMWKTRLFCL
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HVGWLLVRKHPQIKAKGHTIDMSDLRADPVLRFQKKYYMYLMPLICFIMPSVVPALWGETVWNGYFTCAVFR
YVAVLNGTWLVNSWAHLWGDKPYDRHINPVETKVVSVAAIGEGFHNYHHTFPWDYKAAELGNYTFNITKFFI
DTMATIGWAYDLKTVSTDVIQKRITRTGDGSHPVWGWGDKNIPEEDKKVTTVINPEKEE

>OfurZ/E11
MVPYATTADGHPEKDECFEDNEIKSNSLPKLEILYFNVMTFTFLHLSALYGLYLGFTSVKWATIGLGIIFYFFAEIGIT
AGAHRLWSHRSYKAKLPLEILLMVFNSMAFQNTALSWARDHRVHHKCPDTNGDPHNANRGFFYSHVGWLM
TKKSDEVIKQGKLCDVADLYSNPVLRFQKKYAVPFIGTLCFVLPTLIPMYFWGETLNNAWHFNMFRYVINLNATF
CVNSVVHKWGYKPYDKNICPTQNVLLNLAVLGEAFHNYHHVFPWDYRAAELGNQKMNPTTLFIDFFAWIGW
AYDLKTASKEMIKSRSERTGDGTDLWGHSADKLK

>OnubZ/E14_
MADIDATNPYDLQDKSEDDKPEDTEGELTIVGTDYSYTHRIIWPIVMVYVVMHIGAITGLLLVLGGNVKIASIIWA
VFYSLVATEGAHMGAHRCFSHRAFKAKPLLKVILLIMQTISGQHSTYIWCRDHRQHHRYSDTDGDPHNSKRG
MFYCHVGWLMTSRHPLCKKLRKTIDMSDLQQDPLVMFQYRYFRSLFFTFGFLLPVWVPMHFFQESFTNAVFV
CFFLRYVYALHVTYFINSLAHKYGTRPYDKTIQPVETWFVSLLSLGEGWHNYHHAYPWDYKAAEIGMPLNSTAS
LIRLCASLGLAYDLKSVDPETLNKRIMNKGDGTYEVKYLQEHVTAIGPLHPLNPSYRGTCPDPEIKLKVRMKP

>OnubZ/E11
MVPYATTADGHPEKDECFEDNEIKSNSLPKLEILYFNVMTFTFLHLSALYGLYLGFTSVKWATIGLGIIFYFFAEIGIT
AGAHRLWSHRSYKAKLPLEILLMVFNSMAFQNTALSWARDHRVHHKCPDTNGDPHNANRGFFYSHVGWLM
TKKSDEVIKQGKLCDVADLYSNPVLRFQKKYAVPFIGTLCFVLPTLIPMYFWGETLNNAWHFNMFRYVINLNATF
CVNSVVHKWGYKPYDKNICPTQNVLLNLAVLGEAFHNYHHVFPWDYRAAELGNQKMNPTTLFIDFFAWIGW
AYDLKTASKEMIKSRSERTGDGTDLWGHSADKLK

MAPNVEDMESDLPESEEKLEKLVAPQAAPRKYQIIYTNLLTFGYWHIAGLYGLYLCFTSAKWQTIILALILNEMAIL
GITAGAHRLWAHRSYKATVPLQIILIIFNSLSFQNSAIHWIRDHRMHHKYSDTDGDPHNASRGFFYSHVGWLLV
KKHPEVKKRAKTIDMSDIYSNPILRFQKKYAIPFIGMICFVLPTIIPMYFWGETLSNAWHITMLRYVFSLNSIFLVN
SAAHLYGYRPYDKNILPAENKMTFIACLGENFHNYHHVFPWDYRASELGNIGMNWTAKFIDFFAWIGWAYDLK
TASDENIKSRMKRTGDGTDVSGQKYSCESSEVLQ

>CparZ9
MTTGTSLALAGTYFAAKNKKVDDDITTPLTRISGKRRDYEWQIVWRNVLAFVYLHVGLLYGFYLILTGRVKLWTP
VFAVTFTVLSALGVTAGAHRLWAHRAYKARWPLRLILALLQTMAFQNHIYEWVRDHRVHHKFTETDADPHNA
KRGFFFSHIGWLMVRKHKEVFEKGASIDMSDLEKDPIVMLQKKTYLVVMPILCFLLPSWIPVYFWGEDPWTSW
YVASIWRYTMSLNFTWLVNSAAHIWGNKPFDKNIGATDNLTVAICAIGEGWHNYHHVFPWDYKAAELGNYR
TNISTAIIDLAAKYGWAYDLKTVSTQMILNRVTRTGDGSHPSVSGDSKQLEETEHDHHHHPENPVFGWTDADIS
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>SlitZ9-2
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FAVFLYICSGLGITAGAHRLWAHKSYKARLPLRILLTLFNTLAFQDAVIDWARDHRMHHKYSETDADPHNATRGF
FFSHVGWLLVRKHPQIKAKGHTIDLSDLKNDPILRFQKKHYLILMPLVCFILPCYIPTLWGESLWNAYFVCSIFRYV
YVLNVTWLVNSAAHLWGAKPYDKNINPVETKPVSLVVLGEGFHNYHHTFPWDYKTTELGDYPLNLTKLFIDFM
AAIGWAYDLKTVSSDVIQKRVKRTGDGSHAVWGWDDHEVHQEDKELAAIINPDKTE

>TpitZ11-13
MAPNTRENETIYDEVEHKLEKLVPPQAGPWNYKIVYLNLLTFSYWLIAGAYGLYLCFTSAKWATIIFEFILFFFAEM
GITAGAHRLWTHKSYKAKLPLEIFLMVLNSVAFQNTATDWVRDHRLHHKYSDTDADPHNAARGLFFSHVGWL
LVRKHDEVKKRGKFTDMSDIYNNPVLKFQKKYAIPFIGAVCFILPTVIPMYFWGESLNNAWHICILRYAMNLNVT
FSVNSLAHIWGNKPYDKDIKPAQNFGVTLATFGEGFHNYHHVFPWDYRTSELGDNKFNFTTKFINFFERIGLAY
DLKTVSDDVIAQRAKRTGDGTHLWDCADKNNNDVVQTKAQIDTLCTKHE

>LcapZ9
MPPNVTEANGVLFENDVQTPDMGLEVAPVQKADERKIQLVWRNIIAFACLHLAAVYGAYLFFTSAIWQTDIFAY
ILYVMSGLGITAGAHRLWAHKSYKAKWPLRLILVAFNTLAFQDSAIDWARDHRMHHKYSETDADPHNATRGFF
FSHIGWLLCRKHPELKRKGQGLDLSDLYADPIIRFQKKYYLLLMPLACFVLPTIIPVYLWGESWKNAFFVAAMFRY
TFILNVTWLVNSAAHKWGGKPYDKNIQPAQNISVAIFALGEGFHNYHHTFPWDYKTAELGNNRLNFTTSFINFF
ASFGWAYDLKTVSDEIIQQRVKRTGDGSHHLRGWGDQDIPAEEAQAALRINRKDD

>LcapNF
MAPNILGSSLFLADTTLGKNVDDDHSSNFSASDNYSGKRRDYEWQIVWRNVFGFIYLHTGMLYGFYLIFTGQV
KFFTVLFAVLFAILSAMGVTAGAHRLWAHRAYKARWPLRLILAFLQTMAFQNHLYEWVRDHRVHHKFTETDAD
PHNAKRGFFFSHIGWLMIRKHKDVFEKGASIDMSDLEADPIVMFQKKTYLVVMPILCFVLPAYIPIVWWGEVP
WTSWYVATILRFTVSLNFTWLVNSAAHIWGNRPYDENIGATDNKTVAILAFGEGWHNYHHVFPWDYKAAEL
GNYSTNMSTAIIDYAAKHGWAYDLKTVSVDMIRKRVARTGDGTHPSNDDTKKKLEEDHHHPDNPVWGWDD
TDLKDEDRKFAEIAHPKEQ

>DpunZ/E11

MPPNTETFKKLKISEENLEQFPKLVAPQAAPRKYEIIYINVLTFSYWHLAAFYGIYLCFTSAKWTSVFFVFLYCTMG
EVGVTAGSHRLWSHKSYKAKLPLQIILMTLSSIAFQNSVIDWVRNHRTHHKYSDTDADPHNATRGFFFSHIGWL
LVRKHSQTKLRGKTIDMSDIYNNSVLRFQKKYAIPFIGTICFVLPVLIPMYCWNESFINAWHLNMLRYCLSLNFTF
LVNSAAHLYGNKPYDKNILPAENKAVSFLTLGEGFHNYHHTFPWDYRAAELGNNKLNLTTKFIDFFAWVGWAY
DMKTVSDDMIRSRAKRTGDGSIIWDDGKETIEMGDVSDAIVIKNE

>DpunZ/E9
MAPKEADVNGVLFESDATTPDMALPTTPVQQADNYPKKLVWRNILLFAYLHLAALYGGYLFLFSAKWQTDIFAY
ILYIMSGLGITAGAHRLWAHKSYKAKWPLRLILVLFNTLAFQDSAIDWARDHRMHHKYSETDADPHNATRGFFF
SHIGWLLVRKHPELKKKGKGLDISDLYADPILRFQKKYYLLLMPLGCFILPTVIPVYLWNETWSNAFLVAALFRYAVI
LNVTWLVNSAAHKWGDKPYDKSIKPSENLSVALFALGEGFHNYHHTFPWDYKTAELGNNRLNFTTTFINFFAKI
GWAYDMKTVSDEIIQNRVKRTGDGSHHLWGWGDKDHSKEEINAAIRINPKDD

>Dpun
MPPQGQAKSTWVLYETDVINDEAEVPVTVPPTAERRKWQLVWRNIILFGFLHIGAVYGAYLFLFKAMWKTCAF
AIFLYLCSGLGITAGAHRLWAHKSYKVRLPLGILLTIFHTIAFQDAVVDWARDHRMHHKYSETDADPHNATRGSF
FSHIGWLLVRKHPQIKAKGHTIDMSDLKADPVLRFQKKYCLTLMPLACFVLPTYIPMLWGESLWNAFFVAAIFRY
VVWVLNVTWLVNSAAHLWGNKPYDKHINPVEIKPVSLVVLGEGFHNYHHTFPWDYKTAELGDCTLNFSKIFIDF
TSKVGWAYDLKTVSTDVIQKRVKRTGDGSHALWGEDDKDLPTEEKIQASIFNADTTS

>MbraZ11
MDQSVRTTTILRGKEEPTLTWLVPQASPRKYQIVYPNLFTFGYWHIAGLYGLYLCFTSAKWQTMIFSFIL
FVLAEIGVTAGAHRLWAHKTYKAKLPLQILLMILNSIAFQNSAIDWVRDHRLHHKFSDTDADPHNATRGF
FYSHVGWLLVRKHPEVKRRGKELDMSDIYNNPVLRFQKNYAIPFIGAVCFGLPTLIPVYCWGETWSTAWH
ITMFRYVMNLNVTFLVNSAAHIWGKKPYDKKILPAQNIAVSIATCGEGFHNYHHVFPWDYRAAELGNNSL
NVTTKFIDFFAWIGWAYDLKTVSQDMIKHRALRTGDGSNLWGLEDKYVCEKNEGKDE

>AperZ11
MAPCTEKEDELITCEGSIEKLIAPQANKRKHQIVYMNLFTFGYWYIAGLYGLYLFFTSTKWSTIILNIFLIIASGLGIT
VGAHRLWAHKCFKAKLPLQIILMILNTLAFQNTAITWVRDHRMHHKFTDTDADPHNATRGFFFSHVGWLLVK
KHPELMKRSKHIDMSDIYGNPVLTFQKKYAFPLVATFTFILPTVVPIYFWDESLNNAWHATVFRYAYNLNITFLVN
SAAHMWGYRPYDKNIQPTQNIFTTLCTFGEGFHNYHHTFPWDYRAAELGNNYLNLSTKVIDFFAWIGWAYDL
KTVPADIVNSRAKRTGDGTDLWGGNHKHTLDEKENRELDDYVHKSAF

>Obru-TerDasat_
MAPNTLKEDVMIVNEETSEKLVVGAAPRKYKVVWFIVAYATYVHIAAVYGLYLAVTSAMWPTIALTFINNILSILG
LTAGVHRLWTHKSYKAKLPLQIFLMLCHTASNTFTSISWIRDHILHHKYTDTDADPHNSTRGFFFSHIGWAMVK
KQPEARAKGKSIDLSELYANPVLRFQQKNAVWLTLLVAYIIPSLVPLIWNETFTVAYHMNLLRVTVVFNTFLLINSV
AHMWGTRPYDETILPAQNKTVSFFTLGEGFHNYHHVFPHDYRTAELGDNFLNLTTKFIDFCAWMGQAYDRRY
VPDDVIAARMKRTGETNEKNT

>OscaFAD14
MADIDATNPYDLQDKSEDDKPEDTEGELTIVGTDYSYTHRIIWPIVMVYVVMHIGAITGLLLVLGGNVKIASIIWA
VFYSLVATEGAHMGAHRCFSHRAFKAKPLLKVILLIMQTISGQHSTYIWCRDHRQHHRYSDTDGDPHNSKRG

MFYCHLGWLMTSRHPLCKKLRKTIDMSDLQQDPLVMFQYRYFRSLFFTFGFLLPVWVPMHFFQESFTNAVFV
CFFLRYVYALHVTYFIISLAHKYGTRPYDITIQPVETWFVSLLTLGEGWHIYHHAYPWDYKAAGIWMPLNSTASLI
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>Asel
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>Bmor-3
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KHPEVKRRGKTIDMSDIYSNPVLVFQKKYAIPFIGAVCFVIPTLVPIYFWGETLTNAWHITLLRYIISLHVTFLVNSA
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>Bmor
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>Bmor-2
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FFSHIGWLLLRKHPEIKAKGHTVDVNELRNDPILRFQKKYYQILMPLACFIMPTYVPTLWGETVWNSFYVCAIFR
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MAKIDWAYDLKTVSTDVIQKRTKRTGDGSHPVWGYDVGEVATEDKTDTTNLVNSKVL

>Bmor-4
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WLFVRKHPEVKKKGKLIDLSDLFDNPALMFQHRYSKTFIPIVCFGLPTILPVILWDELLVVAWNLTIMRYVINFHV
FFLVNSVAHIWGNKPYDKTIKSAENNLVAFATLGEGYHNYHHVFPWDYRCTELGRTWLNYTKLFIDLCAKVGLA
YDLKVVSDDVILRRVKRTGDRSHFIEN