

	1	90
MIDA_Human	(1) MEHFLLEVAAPRLRIAANKNEKSRSELGRFLAKQVWTPQDRQCVLSTLAQLLLDKDCITVLVGRQLRPLLLDLLERNAEAIKAGGQINHDL	
MIDA_Sacce	(1) -----MSQDRILLDLDVVNQRLILFNSAFPSDAIEAPFHFNSKESTSENLDNLAGTILHSRSITGHVFLYKHFLEIVARWIKDS	
MIDA_Schpo	(1) -----	
MIDA_Giardia	(1) -----	
MIDA_Enceph	(1) -----	
	91	180
MIDA_Human	(91) HERLCVSMKSLIGNHPDVLFPALRYFKDTSVPVFQRLFLESSDANPVRYGRRRMKLRDLMEAAFQFLQEQSVFRELWDWSVCVP	LRSHD
MIDA_Sacce	(81) KKKDYVLVIEKLASITITFPVAMPLIEDYLDKENDHFITILQNPSTQKSDSMFKILLAYRLLYHNKEVFARFIQPDILYQLVD	ITK--
MIDA_Schpo	(1) -----MDVLEIWEVAIYPQIYD	LEH--
MIDA_Giardia	(1) -----	
MIDA_Enceph	(1) -----	
	181	270
MIDA_Human	(181) TLVRWYTANCLALTCMNEEHKSFLLKKIFNSDELHFLRLLEEAQLQDLEKALVIANPEVSLWRKQKELQYQGHVSSDLSPRVTA	
MIDA_Sacce	(169) --EQENQVVIFLAKVLSLYLDGEKTLNDMLDLYTKSRDSLGHFEGDSGIDYSFELNEAKRCANFSKLPSPECFTIEKKSSYFIE	
MIDA_Schpo	(21) --INYVPSNTLQRLRHQPWSKYDYDVWFLYASDETRCTCKKYGETKTYGEVFLNERISQLHRLFVSWTSERAHEHLKN-----	
MIDA_Giardia	(1) -----	
MIDA_Enceph	(1) -----	
	271	360
MIDA_Human	(271) CGVVLPGQLPAPGELGNNRSSREQELALRSVLVESVCKSKQTAMAVASQNAVLLIEGPIICGKTLLEYLAIVTERTKPPQ	LRKVL
MIDA_Sacce	(257) PQDLSTKVASICGVIVPKVHTIHDKVYPLTVPTHKTVSSLRQGRKIQNSTPILIGKAGSGKTFILNELSKYQCH--DSIVKHLG	
MIDA_Schpo	(102) --LLFDAGLSNLPLVELGGNVFNSHVPLPCILVLTKSTQENINRTPYIVQKRPLLAGPEICGKKFLIQAKLQ---QQIRRHLS	
MIDA_Giardia	(1) -----MSGFTDLQNAEVLRAAESIVSSGQAVLLICGPSISGSTILLSHLASKLQA---KPPFP	HLT
MIDA_Enceph	(1) -----MKFKKKHKDEIRVGFLEN--LDLAKAEAVDLKIAVDYICE--VGSTLLSKLHLELCD--EGGRLLED	
	361	450
MIDA_Human	(361) QTDKLLGLMIRCTDVGSEFVNQPGTITQATMGHWILLEIDYAFLDVSLPLLENGLILIPGRGCCKVAPGFQFFITRRLSLSCG	
MIDA_Sacce	(345) QTDAKLLIGVYTSQDQKFTFEWRAGLATAKEGFWLLEIDKAPTDVLSLSSLEERETIPSRGETVKAANGFOLIIVTRINEDH	
MIDA_Schpo	(187) STDPKLLIGVYTS-PKFGFEWQPGTITQAILIGWILFTNTHAESVLSVLPLEKROIVIPSRGETIYAKGSFQMFITIS-----	
MIDA_Giardia	(60) TAQDTDLIGSVMTNKFGRILGLPLAYAAQSGWISSEITTTISQDSLILSSCNTRTILSGSYQISVPDFRIHAKTA-----	
MIDA_Enceph	(64) SREILDARVLGGFYAVLEGVEMKGLIEISVSGDWILFKRIDKNHGLQYFTVKYRLLGNDGEEVLAIDNFRIFTTDD-----	
	451	540
MIDA_Human	(451) G-NWYRPLNSHATLDYWTKEHLDNLDKRLNEVQSRFSLAVDHLDIYIQTGEKHHWSDSVGCEQAPEEVSEARRNKRPT	
MIDA_Sacce	(435) QKDSSNKIYNLNMGMWNVVLEEPPSEETHTIAQKSPILNIPKLDYSYKNKSYMNKFFSLNG-----AHTRVVSVR	
MIDA_Schpo	(270) -----SMKTKIGQRLWQIDLTYPQ-DCEVASTLPVLSICPTLYSVYKDFDIFSQRSFATIS-----IYRRLCLR	
MIDA_Giardia	(144) -----DPAALSTVKSMPFYPLVPPGNHLEQLLKHCHNRGCTILAHIVQFEIHRITAGISASDMVKWARRILDLKN	
MIDA_Enceph	(148) -----RFDMDDVVFVGPLSFVFEEAIEMFIAQCTR	
	541	630
MIDA_Human	(540) LEGEELSRDLINWCNRJAHSFDSSSLSASLNIQEAALDCEITMSEHTSKLKAELVLSKLNIRKKAEEFCQLYKEVINELDQV	GVG
MIDA_Sacce	(516) DLIKLCEFLDILFKNNGINKPDQLQSVDYSIFSEADCFANAGEFKALEPQAIGESDIASSRISFLTQHTTENDDSKG	
MIDA_Schpo	(341) DFYFIRKFAFYHKFMPSDHVVSQLQDAEKEAIDMFGFIPSRDGFLLVRNRIELNIPPE-KALQLRYSVVFQNEHNNG	
MIDA_Giardia	(220) GGAVLNKAVQEASAGTAATTLVSWDDNTRMVIKNAWIAVLRYSKEQTRAFDILRLSLNIHEE-LMSTLLKIKVDIRHYQTKRL	
MIDA_Enceph	(178) RLLTKFEDISADWKVCTKDKEGECRKCCKPRICGNNEWCLSEGSVVCGPHFRSLKIKKRGSNGAGVEERVAYQSCLNLLKHESD	
	631	720
MIDA_Human	(630) FVRLNLKQLEAVHLQREKFTFAATRPSVLEQLAVCSKGEFVLLVGETGTGKTTIQYLAHITGHLRVNMMNQSDTDLGLGYKPV	
MIDA_Sacce	(606) FAVLLLEKLNQKSMNSTLFAFTNHSLRLQESVCQMTPEFLLVGETGTGKTTVQQLAKLLKLLTVNYSQQTETGLGLGYKPV	
MIDA_Schpo	(430) RCSLKLSLIR---SCSTNSAFTSSSLGLEQLAGQTNEFLLVGETGTGKTTIQQLLAGLQKQVTVNMSQQTESDNLGLGYKPV	
MIDA_Giardia	(309) VCGRSLPFYESPDERSLDDICRTNHITRLLEISAIARNNEFLLVGTGTGKTTIQVVARALGKLHVNMSSQTDADLGLGYVPA	
MIDA_Enceph	(268) SLRCALTLEIPSISLHGIGFAKTSCEVWGLFLLWNIRNNHTLLGCTGTGKTTMIQYLLKSHFFLGTQAKLRIVNMADFDTDL	
	721	810
MIDA_Human	(720) DHKLWPLREAFEEFAQTFSSKKQNFTEGHQTCRQKRHDLLLMQHVHKS VNKDGKDSE-----	
MIDA_Sacce	(696) NSKTVAETIQENFETENATFSKKNEKFKHMLHRCINNQKNVYKWNEMAKMQSLKITNTE-----NENENAKKKRR	
MIDA_Schpo	(517) NASTIGPLHERIDFEQTFSSKKNAKFSMASTSARFRWKTCLWKAECKLKTLDGQQP-----LPNPQKRQ	
MIDA_Giardia	(399) TLDRLRLNLYAITGSLGLYISVKKNIQIFVTEIHKSAEKDIAKFLANCETALSGMRQVLRFEVGEVVEQGSQTEQVRVSHDKKYARRGTYE	
MIDA_Enceph	(358) GGYGTLDMNKAIEKICNEQVRSVPCVGNKEKEWLRLNISSAGDGTDLAVTKRIDGLLLEK-----	
	811	900
MIDA_Human	(785) ----TGLLKKRKEAFGLRNHAQQQKMTENLLFAFVEGTIAQAVKGEWLLDEINLAPEILECSGLLEGSSGSLVLLDRGQTE	
MIDA_Sacce	(774) LNTHEKKLLKRWADFNDSKKFEAQSSSIENFVFNFVEGSLVKTIRAGEWLLDEINLAATLSSISDILTEPSSRSILSENQDAE	
MIDA_Schpo	(590) KRLSNQVELRLNQWAKFEKEEDFEKVITGGSNGFVSEVEGALVKAQVSGHWLLDEINLASLETETPIGQLISSYSGTILSFRGQIT	
MIDA_Giardia	(489) NSLYFLQSLGLTLEQATELHKILCHEETKKPMAFKQEGILVQAIVKGSWLLDEINLASVLLVISQLNPEHNEALP---DKG	
MIDA_Enceph	(424) -----RAH-----FVKKRGITTECVNGEWLLDEINLSSEETINLIDGLGKKIIFYYES---GLR	
	901	990
MIDA_Human	(870) PVVRHFDERLFACMNPTDVGKRLNLPFGIRNRFTYVEELSKEDQLILIDYLKLSVNKNVTQYII-----NYTALRESGTV	
MIDA_Sacce	(864) PKAHPDERLFACMNPTDVGKRLNLPFGIRNRFTYVHPDRDTDLSTIDYIKYSQDQWVNN---AELILEAKKLSNNNTV	
MIDA_Schpo	(679) PTPHKNERLFACMNPTDVGKRLNLPFGIRNRFTYVHPDRDTDLSTIDYIKYSQDQWVNN---AELIQVAKSLDGSIV	
MIDA_Giardia	(575) FFAKNPHFRVFAAMNPGSDVGKRLNLPFGIRNRFTYVHPDRDTDLSTIDYIKYSQDQWVNN---AELIQVAKSLDGSIV	
MIDA_Enceph	(479) PIRIHFGELLFACMNPQDFGKRLNLPFGIRNRFTYVHPDRDTDLSTIDYIKYSQDQWVNN---AELIQVAKSLDGSIV	

991 1080

MIDA_Human (954) DCTHREPHYSRTILCRALRFAASNPCGN--QPSLYEGFCLGFLTQLIRAS----PPLVQKLLICQHVPGNVKSLEKPIPEFKGG-----
MIDA_Sacce (951) DGSNQEPHFSRTITRTLLYTDIIHIYGLRRSLYGFMSFLTLLQKSEALIKPTEKTLGRKNVKS--VNSOTPPSPGP-----
MIDA_Schpo (766) DCAEQEPHYTIRLSRTLSYTEIAPIYGLRRSLYEGFMSFLTLLHTSESLLYNHVRRTLGEVRDQQAALIKIPKVDHS-----
MIDA_Giardia (665) ALEKSEPCSTSRRLCRALISFAHRFRAAAGLRRSMYEGFMLEFGSMLEKSRQAALALDKLLNGNKEYLLNPFILIPFNKICTAMIFQA
MIDA_Enceph (559) LSNVVEELVSGRSLVRLNFRNSGERE-FCISVYEFDFLFFVFTQLDFVSRPLAVSLSKFAVLPESTEK-----

1081 1170

MIDA_Human (1034) -----RLQVEGYWIAVDEKEPTIDETYLITTSVKLNLRDLEFVVS--GTPLLIQGETSVGKTSIQQLAAATGNHCVRINNHEHT
MIDA_Sacce (1033) -----DYQFKHYWMKKPNTIQEQAHYIITPFVEKNMNLVETATS--KRPLLIQGPFTSSGKTSMIKPLADITGHFVRINNHEHT
MIDA_Schpo (851) -----SYLAFCHYWRRLSFPVEEQEHYITPFVQKNLNLARACSTRMPLLIQGPFTSSGKTSMIEVIAKQGHFVRINNHEHT
MIDA_Giardia (755) TTKDEAVTVEYQEPQAAGHGLEEEKSRARSTDYVLKSTSYTTSRALAQPLPILEGFTSSGKTSLIKHLAKQFGCPITRINNHEHT
MIDA_Enceph (629) -----TKVKHGFVLPRIQTYRTLRQAILSNCPLIQGDTSSGKTSMILVLSMCRVVRINNHEHT

1171 1260

MIDA_Human (1115) DLQEYIGCYTETS-SGKLVFKEGVLILAMRGYWIILDELNLAPTDLALNRLRDDNRELITETQEVVAHPRFILLFATQNPFGIYGG
MIDA_Sacce (1114) DLQEYIGCYVTD-SGKLSFKEGVLVLAIRGYWIILDELNLAPTDLALNRLRDDNRELIPETQEVVHPHPDFILLFATQNPFGIYGG
MIDA_Schpo (932) DLQEYIGCYVTD-NGSLSFEGVLVLAIRNGYWIILDELNLAPTDLALNRLRDDNRELIPETQEVVHPHPDFILLFATQNPFGIYGG
MIDA_Giardia (845) DLSEYFGYQPDPLGQIVFKGLPLVTMGQGVWILDELNLASSELALNRLRDDNRELIPETQEVVAFGFIILLFATQNPFGIYGG
MIDA_Enceph (693) LAALYIGSFAITS--DGEFKEGALVGMRRGDWVILDELNLACSDVLEVLNRLRDDNRELIPETDEVVPHENFRFATQNIIG--YGG

1261 1350

MIDA_Human (1204) RKLSRAFRNRFELEHFDDEPSSSELETLHKRCSPPSYCSKLVKVMLDLQYRRSSSVFACKGFIILRDLFRWAEYRDAEPTEKEYD
MIDA_Sacce (1203) RKLSRAFRNRFELEHFDDEPQLELETLRRCQAPSYAKLVEVLRQLSIESSARLFEFKNSFATLRDLFRWALDVAQ-----
MIDA_Schpo (1021) RKHLSRAFRNRFELEHFDDEPENELETLHKRCKAPSYAAKLVQVRELRLRQTIRFEFKNSFATLRDLFRWAFEAAG-----
MIDA_Giardia (935) RKVLSEAFQNRFELEHFDISTTELKEILLINSTRHLAPQCEKITTTQILMQLSHRNNAVMTNALITLBDLFVADRLP-RT---
MIDA_Enceph (779) RKGLSRAFRNRFELEFCNGEELETLHGSEPKSCCKKAVEVSGLRRLRSINLITLDFKWSGRPTCMDEVCFI-----

1351 1440

MIDA_Human (1294) WLQHLANDGYMLLAGRVKQELIDVLEVELEKHFKKICPQSLSKNVLKLGKLTQISTLEC-----NFGHVMTEGMRLI
MIDA_Sacce (1285) -YEQLAASGYMLLAERCRTPQKVTVKKTLEKVKKLDMDQYASLEDKSEAGSG-----TWTKGMRLI
MIDA_Schpo (1103) -YQQLAENGYMLLAERARQKDKLAVQVELEKVKKIDTDGILNLSMEIFQDSLK-----EG-----PLSKVMTRPMRLI
MIDA_Giardia (1021) -LTELAMGIELLGERQRPADQQLVAELIANNIGRTFSVSAAEQYAIRRPQSMIEKALKAGADSPKSAFLFKQDVMTPSMRLI
MIDA_Enceph (861) -----GMSLYYERQRELEDRVRVGQVFSESFGEASVERYKKMIAGKEEKCEGERMAGKCDVTLREAFVIEKLYAGNVLTDTFMRLI

1441 1530

MIDA_Human (1373) AMLVGRILEFGFVLLVGTGCGKTTICQFAALANQKLYSVSCHLHMETSDFLGGLRPVRQRP-----
MIDA_Sacce (1351) SVLVSSCLKNKEPVLLVGTGCGKTTICQLAQFGRELLILINAHQNTENGDIIGCORPVRLRSEIQYKIKSLKKTALNIANDQDVLKE
MIDA_Schpo (1176) FCLVWRCLLAKFVLLVGTGCGKTTICQAAECHEKELHIINAHQDTEGDIIGCORPVRLRSAVNYSHSQCEKFNVSQESLDS-IDD
MIDA_Giardia (1110) FALLFTSVNNGSPILLVGVSGAGKTVSVELLAAIQAQQLVQNLHKHETESADFIGLRPLRSRE--SVHAHL-----S
MIDA_Enceph (943) INLMILWESKEFTLVGTGTGKTKACDAAGSVFKTRLQVSMHRGIESDFIGFVFENSII-----

1531 1620

MIDA_Human (1437) -----N---DLEEIDTSRLFEWHGQPLVAMKEDGFFLLDEISLADDSVLERLNSVLEVEKSLVLAEKSPEDKDSEI
MIDA_Sacce (1441) GQLSKSDNKNIADVQLEIQRLRDSLNVLFEWSDGFLVAMTGNFFLLDEISLADDSVLERLNSVLEPEKSLLLAEQSS-----SD
MIDA_Schpo (1265) LEKEKLSSEKNDNLNLIETQIKYRSLEFWDGALVTAAMKQGFLLDEISLADDSVLERLNSVLELSRELTIVHEHSN-----AA
MIDA_Giardia (1181) VIKETAAATTTNVDAKAVAEIKRLETTLGTKLFEWEDGFLVCMKRRHILLDEVSLADESVLERLNSVLETSRELTVAENPN-----MP
MIDA_Enceph (1007) -----WKDGPLVKAMKCDALFDEINLAESVLERLNSVLESQRLYLTETGE-----

1621 1710

MIDA_Human (1507) ELTAGKKFRILATMNPGGDGKKELSPALRRFTEIWCQSTSREDEIQTISHNLRPGLCLGRLDPKGSIPPEVMLLFIDWTHQEFG-
MIDA_Sacce (1525) SLVTASNFQFFATMNPGGDYGKKELSPALRRFTEIWPSEDFNDNMIVSS-----LLEDLKDANPLKFSNFKSLGGG
MIDA_Schpo (1349) VSTAKICFAFFATMNPGGDYGKKELSPALRRFTEIWPVPVDTEDLKIIEG-----KHNNKIELARPLVEYAKWHANEY---
MIDA_Giardia (1265) RPIVIAHTGFKLLATMNPGGDYGKKELSPALRRSLTEFWMPHARDINVRMLIRKLQKTAIYRLGHQQLDVLVSLAEFAEIDITQSG
MIDA_Enceph (1057) -EVVAHICFRILATMNPGGDGKKELSPALRRFTEIWFVSSDEAPLFDYLV-----DKRFGVDIPKKSTTFKFLARSL---

1711 1800

MIDA_Human (1596) ---RKCVSIRDILWYNFNNGGEEAALKRPEIISTVTSFHAACLVVIDSGGVSSGFGTALLARKECKFIKRLAKIVRLTEYQ
MIDA_Sacce (1606) N-ATSGVTSIRDILWVEFINVFPKIQNKST-----TALIQASNVFIDALGTNNAYLAEN-----ENDKSLRTECITQLKL
MIDA_Schpo (1427) -LYTDVTSIRDILAVEFINACEILLN-----LVFNADVVIDALGFTFSLNN-----LASHAERQRCFAKINEL
MIDA_Giardia (1355) RLGDVFTTSIRDILVCFYITEQTKGTTELG-----QMLIDAVTISIDLPVRTQLGNMPACREVKHEMLYLANRILSANTDIDL
MIDA_Enceph (1134) -----NLSIRKELIVFEFIYRYMGSFSGVA-----CAEAGDES

1801 1890

MIDA_Human (1683) KNLKLYDRKAKEFTGIDNLGHPFIPRGEVHRNNI---ADALSAGTANARQLRATKIKKPIILEGSPGVGKTSLYGALAG
MIDA_Sacce (1680) CGDELQQLQETNEIVTQDELQGMFKIPRFDAQSS-----SPNLTAFTASNLVRVFAQVHKPIILEGSPGVGKTSLYALAN
MIDA_Schpo (1498) AGSNILASKSADISKFSDSSFTGDFGIPLGDS-ESDS-----VSLHTDTTLNASKLRAQLKPIILEGSPGVGKTSLYALAL
MIDA_Giardia (1439) IQGLTSISKDTNELTFLQASTQTVLATIPFGQYNHAKALRKMTSPRLDAFTTIKNAACRAALRFQPIILEGDPGVGKTSLYALAE
MIDA_Enceph (1171) WELAEVAGKGIADVNARYEDERMFGVLPYLVEHSS---SEDFEPTSTNLRRILRANGGCGTLEGDPGVGKTSLYALAL

1891 1980

MIDA_Human (1769) AGNTLVRLINLSFQTDITDLFGDLFVEGGKGGEFAMRDGPILLAAKAGHWVLDLDELINLASQSVLEGLNACIDHRGEIYPELIGSFGVQV
MIDA_Sacce (1763) IINGKLTIRINLSFQTDITDLFGDAPGE--RSGEFLWHDAPFLRAKKGWVLDLDELINLASQSVLEGLNACIDHRGEIYPELIDISES-C
MIDA_Schpo (1582) EIGHQLVRLINLSFQTDITDLFGSDPVEGGKGGEFAMRDAPFLAAMAGHWVLDLDELINLASQSVLEGLNACIDHRNAYIPELIDKVK-A
MIDA_Giardia (1529) ICGYSLVRLINLSFQTDILSDLLGSDLPAL--NG--FRVVDVILKAKREGATLLDELINLANQSVLEGLNLLDHRRLFIPELIMSVK-S
MIDA_Enceph (1257) KMGKKCRINLSFQTDITDLVGSYLPV--GE--IRLMSEILHSLADGGWVLDLDELINLCQSVLEGLNVLDRRKRIPELIDVH--

		1981	2070
MIDA_Human	(1859)	HEKTIIFCQNPFRGGGRKGLPSFINREFVQVVDPLTVIDEFIAITLFFPIEKNLYKKMAFNNOIDHEITVKKIGQKGGPWFENFL	
MIDA_Sacce	(1850)	HPNFIYFAAQNPNQYGGGRKGLPSFINRFSSVFTDMLTSDDLLIAKHLYPIEPDIAAKMKLSTLEDQCKRKLIGNSGSPWFENFL	
MIDA_Schpo	(1671)	HPNFIYFAAQNPNQYGGGRKGLPSFINRFSSVFTDMLTSDDLLIAKHLYPIEPDIAAKMKLSTLEDQCKRKLIGNSGSPWFENFL	
MIDA_Giardia	(1614)	PTTIRIFFTONPRSGSGRKGGLPSFINRFNLNVVDVVKQDYDWILNLTFTDPTYVLDYLTGSTKQLRAGE-LLKIGISGSPWELNV	
MIDA_Enceph	(1341)	-DTRIIFATLNPDCSRNGRKMPLPSFINREFVRKIDGYTDDTHILNKLEFPMIVSSTSRENTIRMNQVGTLGDTSYFIDESVVRV	
		2071	2160
MIDA_Human	(1949)	RDIFRWQQLNLV---DQSPGCDYDPOGAFVFLVYGERMRTEIDKKVIAIFKVFSGSNSNPY-----MGTRLFRITPYDQ	
MIDA_Sacce	(1940)	RDTIRWIKLINQ---YSICEDVVDVDFDILIVKQRFRTISDNN-KAQLIIFDIFGKFST-----KENFFKLTIEDYQ	
MIDA_Schpo	(1761)	RDTIRWIKLINQ---APKYTCVSPADYEVVLHMRMTVDVVRTCEIFKVFDDIDYEP-----RTIGFSSSQCFK	
MIDA_Giardia	(1703)	RDYIRFLCDITTTTGLAQGITLAHAKHIAHIFGYRFRFADDAYVQNLFSPHSLDSVAEATQSHHWYSLRPLWNVTEDDVKIGSLAIF	
MIDA_Enceph	(1430)	GSITVEIKERRP-----	
		2161	2250
MIDA_Human	(2020)	IGYSVLSGSCVPHPSRPLLLHQSFQPIESIMKCYMSMMILVGPASVGGTSLVQLLAHTGHTKIMAINSAMDTLLIGSEHQVD	
MIDA_Sacce	(2008)	INNEVALRNPHYRYPQTQNLFPLECAVYVESVLAIRNNWPAVLVGPSNKGKTETRFSLASLGPRIDFSSNSDIDMDLIGGEQVD	
MIDA_Schpo	(1830)	IGHSVLSVVERQKTLDQONILQSLPVLSEVITCIKKKWCILVGDATIGKTCILRLAAAGAKKEMAYNSDIDMDLIGGEQVD	
MIDA_Giardia	(1793)	RIDPVRFRDLVGTKLSYAHSCFTALDVALEAAVAQTQNLSCILVGSPESGKSLRLTLADVRQPVHISASATQVSDLIGGEQVD	
MIDA_Enceph	(1442)	-----RLDFVILHQ-----LQGLEMLMICEIEMNIPITISGG--VGKDSLRFVSSVFGQETITFNCHKDITVCCLIGQYQKI-	
		2251	2340
MIDA_Human	(2110)	IIRPWRRLEKEGTVRAIRDSLLIADDAEVILRAWSHFLLTYKPKCLGEGGKAITMEINKEAVLLMQRLNNKINSY-----	
MIDA_Sacce	(2098)	ITRQISYTELTINIVRELSMNMKLSNATAIEG-----LNLLKYINNVTPEKFQDFRNRFRNFFS-----	
MIDA_Schpo	(1920)	ISRKASEFTPLSQQLNVIKYRNFNDNIFRETSLY-----TLTTSFKTHSQAFITLLQKVVDQLDQLKI-----	
MIDA_Giardia	(1883)	VLVDLKSIRLCLFVHSPIKASYSISFSEFKDLTASLDREIGDGLGSKSRAISMESISEIVQKLLLEFMAKFSPLDSDGGLAANK	
MIDA_Enceph	(1513)		
		2341	2430
MIDA_Human	(2193)	-----KAEFAKLEIFRSFGVKLTQLAGHSHGTIEWVDSMLVQAKSGDWLMDNVNFCNPVLDRLNLSLEPGG	
MIDA_Sacce	(2163)	-----HLEGHPLKTSNMNIEKTEIIKEASVFEWFDGMLVAVEGGMWLDNANLCSPSVLDRLNLSLEIDG	
MIDA_Schpo	(1985)	-----HETLVHSGLIHEKARKLLAEFASPAGFEWFDGYLLAVEEGGMWLDNANLCSPSVLDRLNLSLEHKG	
MIDA_Giardia	(1973)	FSLFCSEILTQDTPVDERFSHPMPTIPKCKSMASLYLSTQSQSGFEVVRDSELKATERGHWELTNANFCMPSVLDRLNLSLEGG	
MIDA_Enceph	(1513)	-----QNGMEFWCDGSAVSVLVEKGMVVFAGVEFVEKSVFDRLNLSIFESER	
		2431	2520
MIDA_Human	(2264)	VLITSEGLIDGSTPTTFNPNFRILFLSHDPVIGDTSRAMRNRGIEITISGEGDASTPDNDLKLHLSLGVGNKCDLALHTETRS	
MIDA_Sacce	(2234)	SLLINECSQEDGQPIVKPFPNFRILFLSHDPVIGDTSRAMRNRGIEITIDELHSRSTAFDRITLGFELGENIDFVSDDGIKKILNNEPD	
MIDA_Schpo	(2056)	VLINENITTEDGHPITKPPNFRILFLSHDPVIGDTSRAMRNRGIEITILKEALTEIDKKQSLLEPAPISSAVDASNLSYAYFET	
MIDA_Giardia	(2063)	GLEILEQGLF--TSIKVHPNFRILFLYAT-SLISRAIRNSLESDIQVSHYNLLDVRCTYSSTASGVSLDPYIKLISLYFE	
MIDA_Enceph	(1559)	TLNLYESGVT--NVAVNPLTRLVLIAKEPQMLSPALDRCHEISDRLNYIDLWKLVFKFPIDGGPFCRDFCGISMKSPISFG	
		2521	2610
MIDA_Human	(2354)	TVIGSPTSSVSTLIQTAILVQYLQGRGLSDRAFSEACWEVYVCSQHSPANRKLQALIEKHVSSIRAHETWHSISLGGWPDSVPSIL	
MIDA_Sacce	(2324)	ISPLKHYPSILSRPCTFAQVH-----DILLSDDEEPTEESLAVIPSHLGGWKWANNVNCTEYIE	
MIDA_Schpo	(2146)	VGKIEIDGNYVYAHAILLAFS-----PRQLILRKVILTNPQFSLSKADALILTITKNLQKIYCD	
MIDA_Giardia	(2150)	LSRDNPEIIGGLLFKWIKLVITYHKRFST-----SVGDPKASSWVDRSFVSVFIASITLNADHRQYVQYQNARLA	
MIDA_Enceph	(1644)	IDKRFRMGIVPDFLSKHICGVYNTLEERE-----IDRLFVRNKSIPNKKIDVELNFYRRLELCIYVPHDDSRMK	
		2611	2700
MIDA_Human	(2444)	FATEDSHLSTVRRDQILVYCLNRMSTSSWTRSQPFTIQDLEKIMQSPSPENLKFNAVEVNTYWIDEPDVLVIAKLLIERATNQDWM	
MIDA_Sacce	(2389)	KKIAERLYVIFTITLDYGLEKINNLYPANIKFQKAQLHDKQLTEEVSTLNEYLPVSKYSDKKSPESEYLLSSRLILNSINA	
MIDA_Schpo	(2211)	-----Y--FNHDIKASRFMDIYEYQLREVGLIQITINDFOVILTSHLEPEIYASGLFVSAHEITDTEENRILAVSTSN	
MIDA_Giardia	(2223)	LQGDGSLEACTLVEIAAVINQLTLGAYKLSNSNLQHSALLELRITTVKPLDQIVSADQEPQIPEPFQVSGWLAICVGHSLDFQHHK	
MIDA_Enceph	(1718)	LLRSMGAMNSEARKVAFKASASLSVFSFPCNDEKCSNFRPSSKDLKMKVRSIRDKKFSEYRKIKTAEHLPEVRWEFPEFDEFYFE	
		2701	2790
MIDA_Human	(2534)	LRKWLHYHLAKNPQGLSEIQIHLEASAASLRNFYSHSGVSNVFKIQPNTTDEFIPLDPRWNMQALDIRNMDFPQTPQPDQL	
MIDA_Sacce	(2479)	LKLINEKSHGKDELTYIELSALFNGRHLKNIPRIPEICILYITVSENKTESFCGSNQYQYYWDVWVIAALTAVTKDLEAR	
MIDA_Schpo	(2289)	STYLLKSAIAVYHNVSFKGSTPLFNWLNINQFSKFLIASNNIYKSYDIRHFKL-----VIVKWNVYVWNTVPCDISR	
MIDA_Giardia	(2313)	ELSNLLTIDINPMYLLTPPEPQALIKYISQGYDNTSPDSLHQIKYSLCSPFYASILKLFIEGKFTTKDSYLLLYIELSQH	
MIDA_Enceph	(1808)	FIERQNDPLSMREGLVVEMNEFENKSTAIHDVMKHVYKYGKSGEEVEDYERGIKEYKIKIRDVEKKGRDYARFKSLKDLNFC	
		2791	2880
MIDA_Human	(2624)	VALLESAANKTIYDREKRFTTEANLISVGSKKLRESVIRMSFEFHQDPISHTLPHEIVVNLAIFELCDAVLVWQSSQGVSDAS	
MIDA_Sacce	(2569)	LRVYKEIDSWIASKSKSDIETPFNINLEFTDVLISRGHSITLWDIRKNYITTS	

		2971		3060
MIDA_Human	(2804)	RPFPFKDKLVVECFSQLKVLNKLVAIREQMSALGESGWQED	NRQVVASQW	LKKSLLQAWGILIRANILEDVSLDELKNI
MIDA_Sacce	(2717)	-----	IRYTFSDVTAE	IKELAPASSATQKLTKLITNKYNYPPIFD
MIDA_Schpo	(2519)	-----	IDLHIFIKYTT	SSFFITDDFVRFIRVCFHSRISGNLLT
MIDA_Giardia	(2558)	GDY--VPKLAI-----	LQDSANRIDLCASKLSGNQHXHTARA	LAQVQSLFLLFTGKAFCMQVSDTLEGWSQRDLT
MIDA_Enceph	(2048)	-----	SIFNRKTRAR	VIESDASRLTAGELVEFMDQEMQELP
		3061		3150
MIDA_Human	(2894)	KKLSLGFLEKKHDEASS	SHPDL	SVIH
MIDA_Sacce	(2766)	NAKLTSTSTI	SSQFLEDV	IR-----
MIDA_Schpo	(2568)	KAVAP	LTIFYD	CSLGTGNIGRIALFTS
MIDA_Giardia	(2641)	NAACP	TYLRGP	IFVSTGEFTSSSL
MIDA_Enceph	(2095)	YQQRK	TDPEC	GLAPENDDADP
		3151		3240
MIDA_Human	(2984)	TPQELRDLWSLLHHQKVSPEEITSLWSELFNMFMSFWSSTVT	TNPEYWLWMNPLPGMQQREAPKSVLDSTLKGPGNLRPIFSKCCFEV	
MIDA_Sacce	(2788)	-----		
MIDA_Schpo	(2605)	-----		
MIDA_Giardia	(2688)	-----		
MIDA_Enceph	(2133)	-----		
		3241		3330
MIDA_Human	(3074)	LTSSWRASPWDVSGLPILSSSHVTLGEW	ERTQQLQDISMSLWTN	AVSSVA
MIDA_Sacce	(2788)	-----	KNN	KSISGNQKQKQISDAE
MIDA_Schpo	(2605)	-----	ESAN	FEHARLA
MIDA_Giardia	(2688)	-----	CR	EDFLS
MIDA_Enceph	(2133)	-----	GHLKEKG	TGNEDS
		3331		3420
MIDA_Human	(3164)	QLLLGSSQAFQH	GG	LGDA
MIDA_Sacce	(2854)	LK	LCSLIEEKTA	ERVTFAEYIFPALDLAE
MIDA_Schpo	(2671)	YE	LAENFVS	LECKAF
MIDA_Giardia	(2755)	VE	LKAIIS	QOSP
MIDA_Enceph	(2199)	FV	RVGHARE	AKDGNP
		3421		3510
MIDA_Human	(3254)	KEEL	HQLQC	WKTRNL
MIDA_Sacce	(2927)	FLKTKTFSQNL	MKSWRNVRK	IG
MIDA_Schpo	(2761)	RHY	LESLYK	ESQILET
MIDA_Giardia	(2845)	ELST	LYNSYA	AADQYA
MIDA_Enceph	(2289)	YTY	LKNRS	CECRDWI
		3511		3600
MIDA_Human	(3344)	Q	LLTRLLQALHIDGPRSAQVAQS	LKEEASWQQSHQ
MIDA_Sacce	(3002)	K	LVSSYKCN	-----
MIDA_Schpo	(2840)	F	LAMRLSKES	-----
MIDA_Giardia	(2934)	LAA	LPLRLINYTV	ESSYLDMTIP
MIDA_Enceph	(2336)	-----		
		3601		3690
MIDA_Human	(3434)	TLATALLAFPSVGPTFPTYYAHADTLC	SVKSEEVLRGLGKLILKRS	GGKELEGKGQKAC
MIDA_Sacce	(3068)	-----		
MIDA_Schpo	(2911)	-----		
MIDA_Giardia	(3024)	CYDKFIRSCCSKT	VSTLHVARLFTLSLLQYSS	-----
MIDA_Enceph	(2336)	-----		
		3691		3780
MIDA_Human	(3524)	FRH	ICQE	ISEWDEQERIAQEKAEQESGLYR
MIDA_Sacce	(3113)	EKV	MYFTL	FKFKRDL
MIDA_Schpo	(2958)	YLF	IASR	CSEKQHSDD
MIDA_Giardia	(3107)	RNQSSTAEGVSEDELK	QIAALFPK	NDSHFIKSDT
MIDA_Enceph	(2336)	-----		
		3781		3870
MIDA_Human	(3614)	LS	NSMQA	ML
MIDA_Sacce	(3181)	FPDYEDTA	VTNEKD	SSPENLDDIYFKLADTYI
MIDA_Schpo	(3026)	FI	YDDEVEPE	PEPE
MIDA_Giardia	(3193)	PI	ERLQN	SS
MIDA_Enceph	(2336)	-----		
		3871		3960
MIDA_Human	(3704)	DLMKPDGPDYD	FYQHPNVPE	ARQCQP
MIDA_Sacce	(3271)	FKNTEVFGNID	FYHDFSI	PEFQKAGD
MIDA_Schpo	(3116)	ERQYWT	PPVYN	FYSDPNPSKA
MIDA_Giardia	(3283)	KTRRAIH	CEDI	SRPYPYET
MIDA_Enceph	(2336)	-----		

		3961		4050		
MIDA_Human	(3793)	RALSRLRKHLID-----ISQITIRWRKLEINC	SMSLDNTMKHIEKSTKHWSYQMEKHMQEQTTEEQEDDKQMTLMMLLVSTIQA			
MIDA_Sacce	(3360)	SEVSLNNTTKL-----TDDIISWRKLEIRT	WGLFNSEDA TRKSIGKWWYYESNISNVSEKKE---TAPNATLLVSSNL			
MIDA_Schpo	(3205)	REYSLANEIDL-----IKKKIDWRKFELSN	NNLLKLEEYLERVYPRLSLQLQFLLKPPFFENSKF---TKQNLCEASITIVQ			
MIDA_Giardia	(3373)	AVYKYVTNPNPVPESLTKS	IHMIMTWRSELMSSNGGFFSRVHTQFINVSLTYWPELIASITYQRSVTQGE-----PSTEAYYKQIRE			
MIDA_Enceph	(2336)	-----	-----			
		4051		4140		
MIDA_Human	(3874)	FIEGSSIGGFHRLQLLVFHCHLLPQVEGKD-----S	CSILWNHYHKKOFDRQAKVELSPLEKEKFKSKNNIVS			
MIDA_Sacce	(3438)	FFSKSTIGEFNARLDYKAFYKIQGLGRSSK-----	AGLHNTIKYQFKPLIDERITNGKSLKEKIDITLASWKDVN			
MIDA_Schpo	(3283)	FETDLRGVGFQCLKCLLSFSQAASRICHG-----	DDLILNHYHTEQLSKSEATHQQLSLESKRILLMSWKDTN			
MIDA_Giardia	(3458)	FITYESNIGGFPRLLKITYTLSALISN	EELAEPELVSSPHKTMTSAYLFSASEAVEFAKYINKEFEEEAQKKRFEQIRFEWNNRS			
MIDA_Enceph	(2336)	-----	-----			
		4141		4230		
MIDA_Human	(3956)	FVSTIKQVEKERTLRFMKKKEAVLSEPCRS	SIVESDKEEQPDFPRPTDGAASELSIQNLNRRET	LAQPAAGQATIPWCQGAA		
MIDA_Sacce	(3518)	VDLLKQSRKSHNNLLKVERVYRLNGDAKII	EAGLLYSNENKILPTLKQHFYEDPNLEASKNVKE	ST-----		
MIDA_Schpo	(3362)	VVALKESAKKSHAELEKVLHYRIVLRQPVS	YLSQKHDWDS---LDTENNSAMWVKKVNLSP	YIEKDT-----		
MIDA_Giardia	(3548)	STSWLRLQNSHRLCTKLEETVVLQHAT	AFHMGYSATYDRIPSVTVQEYLPLES	ESGMPPESQEV-----		
MIDA_Enceph	(2336)	-----	-----			
		4231		4320		
MIDA_Human	(4046)	PSGLEGLLRLLPKRKRMKMCITFMKESPLRRLVEGLDQFTGEVISSVSELQS	IVEPSAEKEKORSEAKLLMQQKALDLFHLA			
MIDA_Sacce	(3591)	-----WSMGAAPLRNIDTVASNMDSYLEKISSQE	FPNFADLASDFYAAERLRKETPNVYTKENKRLA	LTQKSKLLGDALKELG		
MIDA_Schpo	(3432)	-----EIMLVLPFRSNTPTTLRLMWTLFANVEKPGSTFTNMVSNLITDAREL	KLTETINDDLSEIKLLSRKHLLETFETL			
MIDA_Giardia	(3621)	-----	RNYCVEQMCHGR	ESETLKNENSLISDVLVDLV		
MIDA_Enceph	(2336)	-----	-----			
		4321		4410		
MIDA_Human	(4136)	KIGLSYRKGLAWASKNPQEMHLHPLDLQSALSI	SSTQEADSRLLTEISSWDGCQKYFSLARHALLNALATPAK	ENGGNBERC		
MIDA_Sacce	(3673)	RIGLVNFREDIQVQSSTTTLANAPFFNNEYLNSS	-----DAFFFILDLLPLRS	ASNPSDQPVAAERGC		
MIDA_Schpo	(3515)	AFGLQYRVKAGIEENLSNLRNLAVPTFPVTSLS	EKV-----DRSLMSLDFIP	FQTLAGHQHNLSPVQCG		
MIDA_Giardia	(3657)	ETLGCVLSSGFAFQSGFWKLAHLCPSVHSTFEL	HH-----MFHDLCQRCN	NEPHDTERM		
MIDA_Enceph	(2336)	-----	-----			
		4411		4500		
MIDA_Human	(4226)	RIFSAHLKELRQRRSLTTLEQWIIENLCLQ	QEIHSRLMGPPQAYPVAFFPPQDGVGQWTERLQHLAMQCQILLEQLSWLLQCCPSVG			
MIDA_Sacce	(3743)	MILAQSLVFSLLTVRHPLSEFINDYCKNGMLD	EHFTC-----			
MIDA_Schpo	(3587)	VLFNSLVSQGERAQIVFELNELLANFYEGVNGS	-----			
MIDA_Giardia	(3715)	KRIACINQFVQLSELVELADIELSEVRL	APTGSSK-----			
MIDA_Enceph	(2336)	-----	-----			
		4501		4590		
MIDA_Human	(4316)	PAPGHGNVQVLGQPPGPCLEGPELSKGQLCGVVLDLIPSNLSYSPSPIPGSQLPSGCRMKQDHLWQQTSTRITEM	KTIKTVKADPKIR			
MIDA_Sacce	(3783)	-----	LKGDIVHS-----SLKANVDN	RLFEKWLPSTDYA		
MIDA_Schpo	(3627)	-----	PLESFNNSSFNEVSSLGVDHDFENRAQA	SMLCQIYAIYQKH		
MIDA_Giardia	(3755)	-----	SQADSVLYVYLADNSVPQLLTQVMASHVTKAHKMCMS	QJEF		
MIDA_Enceph	(2336)	-----	-----			
		4591		4680		
MIDA_Human	(4406)	QQSCETLFHSWKDFECSSALSCLSQSVHLQGLE	LFILPGMEVQRDSQMAVESLEYVRGEISKAMADTTWK	HLTSDSQGGNQM		
MIDA_Sacce	(3814)	AQTLVSISKYSATSEQQKILLDAKSTSSFFHFN	SRIFFDSFISYSRFELFNELLKLENAKETGNAPVFD	IEWIKANKGGPIK		
MIDA_Schpo	(3670)	SISPTASFQSIGHE	SRFADLLSNKFPSSPLY	SADKVSIRQQKGINDIEYCRKKRTELPESYCKHLVQLSLKS-----IS		
MIDA_Giardia	(3796)	LIGLPLDSCKSPTKHEQIGGFLERESADS	TALNRIKIFKFSALIKRLCS	TLIPLAFFEAKAILQQILADSPIFSALIAVLPTA		
MIDA_Enceph	(2336)	-----	-----			
		4681		4770		
MIDA_Human	(4496)	LDEGFEDFSQMEIAIRALCAIQNLEERKNKAEN	DQASPQEDYGFERLQSGHLTKLEDDFWADVTLH	QKIISAILLERLRL		
MIDA_Sacce	(3904)	KEQKRGPSVEVEQAFRRFTFTSIL	FPQKVGIGIESSETDDNWLASFKK	MVNVKLRSVSVSKNIETLSLKDFDFETI-----		
MIDA_Schpo	(3755)	RTQVDTN--EFLNLMNFFLNFDL	LLSSIETATKNRTFKELAETS	EFIESSCFSKLRAFNLKFSKLSSKEKLRSS-----		
MIDA_Giardia	(3886)	PISTFTEHAKYLAQVTEVDTTE	AAQCRV	EAATSSIEWPYFALPEASGEEGLS	EIIVDNAKKQSYAYMTAFTTSILQ-----	
MIDA_Enceph	(2336)	-----	-----			
		4771		4860		
MIDA_Human	(4586)	KSYGEDGTAAKHLFFSQSCSLVRLPVSS	SDLVFFLTMSATIRSTAKLSVLAQVFTL	LAQKGFCLEKEFMDSDAGGATEFHDY		
MIDA_Sacce	(3988)	-----	ESIYVKSVLSFTLPV	TRYNAMTVVLLERSRIYINTSRGYIIL	TLHSAKNGFCSPQPPSE-EVDKNLQEGTG	
MIDA_Schpo	(3837)	-----	VDKMSCQLMLFLPVCEQ	INLAESVLDYFINVNSNLDLSK	STFFMVANNGFCSDLPQEGKSNGELES	
MIDA_Giardia	(3970)	-----	PILQCA	RRHVS	LPVLPQKLLCQIETL	KGDQALADVLA
MIDA_Enceph	(2336)	-----	-----			
		4861		4950		
MIDA_Human	(4676)	EGGGIEGEGMKVSDQIGN	EQVEDTFQKGQEKDKEPDSKS	IKGEDNAEMSEFDGKMH	DGELEEQEEDEKFLSEGG	
MIDA_Sacce	(4064)	LQDGEAQNNNKVEQEDDLTDAQN	-----ENKEQQDKDER	DENEDDAEMEGDMAGELEDLSNGEE	NDEDITSEELDEEDDD	
MIDA_Schpo	(3914)	LQSGVAEDITNTNE	DDLELAN-----E	DTANQSDLD	ESARELES	
MIDA_Giardia	(4047)	LQDGTCDQNVSKAAK	ILCEDILMGN-----QNDR	QQEQQKDG	DEATEMQNDFG	
MIDA_Enceph	(2336)	-----	-----			

		4951		5040
MIDA_Human	(4766)	LNGLADKLDRLWGDDDEEDEEEDNKTEETGPGMDLEDSELVAKDLNLDSGNSNKKDKKLEKEEAEADGGQGDEKINQIDE		
MIDA_Sacce	(4147)	SEEDPNAIDSKMDDKASNSKEKDTD--QNLGDKNLEDVQAENDQQRDNKEGGDEDPAAPEGDEEIRNSNAEENDVGVQDE		
MIDA_Schpo	(3991)	PEDLSNSINELIWDPENE-----DLLETFKSNEQSAANN-----SDLVSKEDDKALDKRQEKSEEEEMSDDVGIDDEI		
MIDA_Giardia	(4129)	ELGGAIDERNYNEDDSAEEYSDEQKKN-----TNNNLTMLLAAQEKQDSINSELSDPSGEQHEQAATGSTDQAQEDDYNLILDK		
MIDA_Enceph	(2336)	-----		
		5041		5130
MIDA_Human	(4856)	RDYDENLVDPYHGNQEKVPEPFLDLPLDINXISEDKNNGEITDNEEGEENPLEIKKPKLEAGHAEERGTTETQNESQSPQPIEGP		
MIDA_Sacce	(4235)	VKDEEG-----DLEANVPEITLTLPLDINLDSEHEISDEIVDMSGMPDLN--KEEVGNDEEVKQSGSIESNENDEP--GPIEDA		
MIDA_Schpo	(4066)	QPDIGEN-----NSQPPFENEHLDLPLDKLDEKEGVSKISDLEIMMAADENKEEAALKDEPMQFFDPLENNTILD--DIQDD		
MIDA_Giardia	(4214)	NLSGQSLSVPEADGEDETVDNELLEEQQQMSLSNFDQACAIEDDRLLPSSDENAEHEHEAPVITIDNEASDEQSTYNILRRDD		
MIDA_Enceph	(2336)	-----		
		5131		5220
MIDA_Human	(4946)	SEDKKEGSEEMDTGADQDGLAAQHPEEHSEEQQQSEKLEKEAEEGGNGGPAQGFQEQEEEREESDTEEQPEALERKEHASCGQ		
MIDA_Sacce	(4316)	GETITLALDEEGAEVDVMTNDEGKDEENGPEEQAMSLEELKQDAAMELEKEKGGEQNTQGLGVLEKADTEDDQ-----		
MIDA_Schpo	(4149)	DFSLLAEDLEKMNELGFENVQENESTEDGVKSDEEQQGVPEQAIDNHFKPMAKSTFASAEADENTDKGIQGE-----		
MIDA_Giardia	(4304)	AINISLQQQATNDEEMQKDTDYDQENITDSNPDANEGTNQQKQTHEDNDQFRQNIEDQWEAESTNSQGEGAESA-----		
MIDA_Enceph	(2336)	-----		
		5221		5310
MIDA_Human	(5036)	TGVENMQNTQAMELAGAAPEKQCKEEHSGSLAANQAEGHNSFIAQLASQKHTRKNQSFRRKPGQADNERSMGDHNLEVHKRLRTVD		
MIDA_Sacce	(4394)	-----EAAVQQSGSKGAGADATTQEQDDVGSGTQTNTYEEDQEDVTKNNEESREEATAALKQGDSMLEYHRRRQDI		
MIDA_Schpo	(4227)	-----NEELGEDG-----AASGVGNGTADGEFSSAEQVQKEETSTPKAMSEADRQYQSGDHLLEWQQAN---		
MIDA_Giardia	(4382)	-----DLKEGNPDMLELFEQFIWKERLNDHRESEKDEAPQDMPLQSNKTVEFDDSKSGRGALGLTESKH		
MIDA_Enceph	(2336)	----FNRIPKEMFSNSEVCLGKVVNQMVEDTTLMLNLTMCINPNYPFMYFVFMFRLEEGAVEDGTGMKSGTGNLNVSLIEHEDEIDD		
		5311		5400
MIDA_Human	(5126)	TDSHAEQGPAAQPAVVDADLEFEHIKQGSAYDAQTYDVASKQQQAKESGKDCHEEIEDTLMDTEEQEEFKAADLEQLKPELIKSG		
MIDA_Sacce	(4469)	KEAQTNGELELEKINRPFDEFHVEGANTDTQALGSAQDQLQIDDMAIDERE-----EQEDQKEIVLDD		
MIDA_Schpo	(4292)	-RIHEW-----LTSQSQAQFDEEFMHVKEDLEDLQALGNAEKQIKIDRDESAQN-----PDSINSTLAEDEAD		
MIDA_Giardia	(4450)	RNLTNQEFANPEERLVHNSCETSQSSHPPPEHINPEISDEGEESSTASDKQEQ-----AVLSHILRSKDK		
MIDA_Enceph	(2422)	EYGEQEKVSSDGIDFDNDGSISTASEPEEECEGVDGWNDEEEEDDDKNEKECSEQNAEIDIEDEGIGSEGSLESGBEELICNS		
		5401		5490
MIDA_Human	(5216)	TTPLGFEMVLTQTVKTEEQDPRDKHKETENKPEERSRESTIHTAHQFLMTIFQPFKDVNELRQELERQEMWQPRISGNPEE		
MIDA_Sacce	(4544)	EKMDIDEEMLSLTAHDANNVDSKKSFIGKRKSEDFENELSNHFSADQEDSEIQSLINIEDNPPDASASTPERSLEE-----		
MIDA_Schpo	(4362)	EVQKQIQGQDISIKQTGLTLPTFESINQ-----SEKVFLESEDELEDELDPYNVKITNPAAMPDE-----		
MIDA_Giardia	(4520)	LLNPEGEVYQELA SLASEETKRAPEDEVASAR-----		
MIDA_Enceph	(2512)	SENESSIEEDVSSGGESARSRDVEDLDSYNKPFANEYQFKEGVLNKNQTCVAENYERYVAGKNPDDNALCAGEGSEFSGDDDDSS		
		5491		5580
MIDA_Human	(5306)	EKVAAEWMQSYILTPLSQICEELRILILEPTQAALKGDFRTGKRLNIRKVIPIASQFRKDKIWLRRTKPSKRQYQCLAIIDSSSM		
MIDA_Sacce	(4629)	---SRLEWHKSEISTDLVSLGGEQLRILILEPTAALKGDFRTGKRLNMKRIPIPIASQFRKDKIWLRRTKPSKRQYQCLAIIDSSSM		
MIDA_Schpo	(4430)	---SRLEWNKHEDSTKQLSIEICEQLRILILEPTLAKNGGDFRTGKRLNMKRIPIPIASQFRKDKIWLRRVKPSKRQYQVLMISIDSSSM		
MIDA_Giardia	(4554)	---GNHLLDLKQTAAAFSLAERLRLILEPTVTDLKGDFRTGKRLNLRRIPIPIASEFQKDKIWLRRTKPSKRQYQVLAVIDSSSM		
MIDA_Enceph	(2602)	SGGDVFESTVRRIEDQDCTLTNLRLILSKRNLNYGDFRSGKRLNMKRLVPIPIASGFEDFIWRRQNDKLEVVRILFIDNSSSM		
		5581		5670
MIDA_Human	(5396)	VNHTKQLAFESLAVGNALILEVGQAVCSFGESKLLHPFHEQFSQSGSILRLCKFQKKTKAQFESVANMFAAQQLSQNIS		
MIDA_Sacce	(4716)	SESKCVKLAFSLCLSLTLIQLEAGGSVFGENKEVHSFQQFSNESGRAFQWFGFQETKTVDVKKLAETKIFIERARAVHN--		
MIDA_Schpo	(4517)	SESGSTVLALSTLALTLALSILEVGQAVMFGGEQPELLHPFKQFSSESQVQMFSHFTFEQSNINVLALADAMKCFNYANTASHHRS		
MIDA_Giardia	(4641)	LP--IAKYALQATLTFNACKFLEVQGLSVFSGQKFELLITDQNDASLYAIGSETFAQNKTRVSDASISDYLDLSVFFFKGSDS		
MIDA_Enceph	(2692)	YSQEMIDTLLSLYSKLNNSFSL-GIPLEVYFGEVTERCPVE-----MRNDSRTIVD-----		
		5671		5760
MIDA_Human	(5486)	--STAQLLVSDGRGLFLEGKRLAALAAARNANFVFLVDNPSIRD-----SLDLKVPIFKGPGEMPILRSYMSFFFPYLL		
MIDA_Sacce	(4804)	--QWQLEIVISDG---ICEHSTQLLRRARENKMLVFLVDGITSNE--SLDMSQVNIIPDQYGNPQKIKTKYLDTFEFYVYV		
MIDA_Schpo	(4607)	NSIRQLEIVISDG---ICEHSTRRLRAQEEKMLVFLVDNVNQKKSSLDIKKVYDTKEDGTMDKIQPYLDEFAFDYVYV		
MIDA_Giardia	(4729)	---ALQILLVISDG---RLKRGGALEIRCMGRGQPVLLVLDTDKKSIS---DIKSVSITDSSGKVRQRTSMYLDTEFFQCYALL		
MIDA_Enceph	(2746)	----WIDE--FNDG-----INIILTDGIFQNAGYHPNFLVLLDKCDVRKMSKIVSEGSFVQRYLDTFFKYCLLS		
		5761	5787	
MIDA_Human	(5570)	RDYNALPETLSDALRQWFELVTASDHP		
MIDA_Sacce	(4887)	HDISLPEMLSLILROFTDAIS---		
MIDA_Schpo	(4694)	RNIEFLQLLSALRQWQQMSN---		
MIDA_Giardia	(4809)	RHIEDLPETLVAVLRVIESGVYNAV		
MIDA_Enceph	(2814)	GVDLEST-----FIMALSEITIS---		