

Supplementary Data 3. Sequence of protein components of the small RNA machinery from *Nematostella*, *Amphimedon* and *Trichoplax*.

>Nematostella vectensis Ago1
MASNNPVNRVGGFNPNPKRNHGSTGRTIALRANFFPVQLPRGNIHHYDLSICPDKCPRRVNRDVEVMV
LNYHKVFGGMKPVDFGRKNLYTRDPLPIGKTPTEFEVVLPTDNSQDKFKVTLKQVSLYALEKALEG
TCNQIPFETIQALDVLRLHPLSMKYTPVGRSFFSPDPGYDFPLERGREVWVGFHQSIKRSQWKMLLNDV
SATAFYKQCSVVEFMCEVLRIRKDDKHEKHALPLNDADRFRTRTEIKGLKVEITHCGPMKRKYRVINVTQKQ
AQLAQFPLTLTESGQTAQITVARYFQDDKHKQLRLYPHLPCLOVQEQRHTYLPLEVNCNIVPGQRCVKKLTD
TQTSKMIARATARSAPDREREIRGLVKKANFDEDAYVKDFSSISIGKNMVVELQGRVLPKPKLVYGGKVRIEK
IHSFSGVWDMRGRQLFHGIEIRTWAIACFVQMQMCTEDSLRRFSNQLMKISVEQGMPISCPPVFFRYAR
NPDEVERMFRRLKEAHPDLQMLILVVLPGKTPVYAEVKRVGDITMLGVI TQCIQGNVTKPSQTLNSLCLK
INAKLGGVNNILAPEIRPPVFRPEVIFLGADVTHPAAGDDKRPVSAVAVVGSMDAHPRSYYASVRVQTHRQ
EIIAELAAVRELLVQFYRSTRHKPQRIVFYRDGVSEGFQVRLVHELKAIAREACIKLEVGYQPGISFIV
VQKRHHTRLFCQRDQDKCKGSGNVPPGTTVDRGITHTPTEFFDFLCSHAGIQGTSRPSHYHVLWDDNNFSA
DELQALTYQLCHTYVRCRTRAVSI PAPAYAHVAFRFRYHMMDRDKEAGNDNSVASGEDCRGPQLLANA
VQVHPKVLQGMFYA

>Nematostella vectensis Ago2
IKRKFTVMGLSHPAFNFRLENDTETTVVEAYFRNKYNI SLRYPHLPCLLVGQKKNVPMVEVCSMIPTQR
KRLTDEQTAAMIRKTAKPANERQDINQWVDELATASDQYLKNEYGMRINKQMVAI EGRVLPAPELTLGG
NPQGSALTPSDGAWDMRGKFFFEARTVEVWALVCFSHPKWCPEKLEGFARQMGVNCRSEGMRMNPVPCR
AEYASRVQVEVEGIFGKLLDEFKSLQLI VVALPDRGNKDVYNEVKRVGDITVGLIPTQCVQMKQFTMAKPOV
CSNIAMKINGKLGGTNHVIADRLKATI TDDKGGKIFDSVPI IFGADVTHPAPGDNGI PSIAAVVASLDRN
ASRYCARVRPQTHMKCKQAEI IVDLADMVKELMIEFYKXTRKPAR I IFYRDGVSEGFQVLLLEEVRA
VQACAMLEKDYQPLITFVVVQKRHHARLFAEEGRDARGKSRNVPAGTTVDTVI CHPFEFDFYLC SHAGI
QGTSRPTHYHVLVYDDNGFSADKLQALTYQLCHTFARCTRVSVPAPAYAHLAARFR

>Nematostella vectensis Ago3
QENMELPKRPGYREGREKIKLRRANFQVTLPNVDFLYHYDLEISPEKAPVSVCRDVVDAAIKHGEFKGVF
NGCKPAFDGRNRLYCREPLPKLSEASLKVTLPGTDGGKERKFTLKI KEAGLVS IKELDQLFNGEFRGK
PQDAIQGMDIVLRQMPMSMKFTAVERGCFPPPNHGHCHDLGGGCELWTFGYQSVRPSQWKTMLLNDVSSKG
FQKSMPVIDFMLEILRQDRNRVLDTRWVMDERDKKLTTEIKGLRVETTHIKRKFTVMGLSHPAFNFR
LEDNTEETVVEAYFRNKYNI SLRYPHLPCLLVGQKKNVPMVEVCSMIPTQRKRLTDEQTAAMIRKTAKPAN
ERQDINQWVDELATASDQYLKNEYGMRINKQMVAI EGRVLPAPELTLGGNPQGSALTPSDGAWDMRGK
FFEARTVEVWALVCFSHPKWCPEKLEGFARQMGVNCRSEGMRMNPVPCRAEYASRVQVEVEGIFGKLLHD
FNSLQLI VVALPDRGNKDVYNEVKRVGDITVGLIPTQCVQMKQFTMAKPOVCSNIAMKINGKLGGTNHVI
DSLKATI TDDKNGI I FNSVPI IFGADVTHPAPGDNGI PSIAAVVASLNRNASRYCARVRPQTHMKCKQAE
EIIVDLADMVHLIYIRLWRKLESHDTQTMFRRFQVLLLEEVRAVQACAMLEKDYQPLITFVVVQKRHHAR
LFAEEGRDARGKSRNVPAGTTVDTVICHPFEFFDFYLC SHAGIQ

>Trichoplax adhaerens Ago
MAATAFTKAALPQRNGFGSGKGR IAVYANHYPI SFQAENSI IQYDMQTNPEVKIKSDLRDFISILQSSYS
QLFRGVVTAFDGVRNIYANKRLNGISSDGKFTTIDKEMRPGA IKSFKIQI KEVQLIQLTDLNRLRGETD
VPYQAIQAVDVVLRCTLAKKFTMVYRSFYEPADDDWRSLGCGHESWRGYQ SARSTQGLSNLIDTSH
AFYEAVLVHNF IARYFNQDEIRSLRDFQRKTMASELKNVKV TALHGDKKRKYRITDI SNNKPNQIQDFHN
GKRVSVTDYFKTTYGYTIRYDPLPKLMMNKEIHLPMVECEIIPQGYKKKINERETASMRFAAIPADQ
RRGKIDTFVNRTAQYSTDPVSKGFNI QVDPHMKKV DARVLS PVKVI YRSGEMLPDRGGSWNLQNAQFIS
QVHSWGCVWFRDRLNRPKVEVLLSKLKKSTADCGIEG INEKNL CMQIKNIDKANHQFLANLALKINAKL
GGTNNTINQSELKKPTI IFGADVTHP IGDQTSPSVAIVGSANIDL SHYFAIRIQEHRKEI IQDLQS
VVKTMMLSFYRKLHHRKPERI IFYRDGVSEGFQVLLLEEVRAVQACAMLEKDYQPLITFVVVQKRHHAR
FFPSQNKDSVGKARNVPPGLVVDRGVCHPSQDFYLC SHFGIQGTSRPTHYHVLWDDNKLSADSLQEFTY
QLCHVYCRCTRSVSI PAPVYVSHHLAFRARSYMAQLGGEMRQPQEMNRKIEQVLSKNIGGAVFFA

>Amphimedon queenslandica Ago1
MSDRGGGGRSRGRGRGRGSSVGRGSRNAGRDSRNDTPPVGGLSSRPSETETPHSVGVQVQKSNPKGTPPTSP
PSVTKPEPTAPAVPLTPKRENGPVTQSPNNSPSSGSPSSSTSSPSSCIGSSIMSSPQSLYSASPI TVSG
TSSSSKLDSPHPSFKYRDLPPPFGVGLGRPIVLQTNHFPIKFPKTEGELYHYDVTLKPDTPCRRIINRAVIK
EIEKKYRENLQGI LLAIDYDGTKNLYTSKPLPFRSKEFLVPLKLEDEKKEKKEFVEIKKVVGS I PLDVLSQLST
VHTTQSSDVQSAIQGLDIVLRLTLPMSFVTVGRSFFTPPVTGRGHPLGGGREAWTGYVQSVRPSMGWITL
NLDVSNATAFYKEQPVLEFLKEVINDDGGVGGGRRGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
SIRQLPCPSSLTDAQRRQFAKDIKGLKVKVTHLAYPRKYKVKDITQKSSRDLFFDCDQQT SVVDYFKSKH
GKPLRYPDLPLCLHMEGKPNHVIYIPMEYCEVLGQKCNKLTPEQTSAMIRHTAKPAYERQKQIMEKIHGAHF
DGDEYLNKNGI KVSKRMSVEAGRVLDLDPKMEVGEKRSVEPRNGSDTRGKSPKMSI KKWGIVITARYFND
INVFASEL SKASNEKRMMPPIE IYTFKPRDDLEHILRTKFGACDIVI VILDGKQKPTYNEVKRVGDNTV
GIRTQCVLFKNACKPNTATMSN ICLKINSKLGGTNSIPNYEKTDYAFWPWESSPFI IFGADVTHPAPNDKRS
PSLAAVATASMDENAMDYRAKVKVLLKHRQVFGI IDELAGIVKEMLLKFRKNDKCKPQRI IFYRDGVSEGF
KEVILLNEVAAIQKACLSPGDYKPGITFLVVVQKRHHARLFC TDRRQEGKAGNVPPGTTVDTITHTPREFD
FFLCSHAGIQGTSKPAHYHVLWDDNRSADLQALTYKLCHCFVRCNRSVSYPAPTYSHLAAFRARYTLQ
DWEKSSSYHSDTDSFSYSSSEDLSDVSKMEEAIKVNEFLQDSMYYV

>Amphimedon queenslandica Ago2
MSRIGTPIDSSHSWSPMDRYTASASLPLPVPAHSLPPPVTLPVTLGLPFPFPGPRGGGGGVPVPTFPFPSTL
PSPSITSSPLTPI TPQTPSSITPGSILPWPSSASLHPTLSLQPPPRPNFGQIGRPIGLRANHFQVKIPTS
TLYHYDVAIHPDKCPRRVNREIIEALI QTRKDYFEEQHPVFDGKKNLYSRKPLPGI GRDRVEITVTLGGDG
NRERAFKVSVKYAQVNLALDLSVLRGESLAPI PFESI QALDVVMRHLPSMTYTPVGRSFFAPPEGEPTL
GNGREVWVGFHQSIKRSQWKMLLNDVSGATAFYKRQCVDLDFVHEVLDLSDSDEVTHGTGPIRRKYRVNCVTR
RPASAQTFPLQLENGDVFDCSVVQYFKKRYHIDLQYPFLPCLQVQGEKHTYLPLEVCDLVPGQRCIKKLS
EMQTSRMIKATSRAPDREINRLVAFANFNADPYVQDFGISVDTKMVTVTGRVLPKPKLVYGGKARVQA
LPDRGVWDMRGKQFHFGEVSVWAI IIFTSVQKCEPEELRNFFVQLRKI SQDAGMPFRRDPPQFVRYIQDRL
GVERVEAVEPLFRQLLTEM EGLQLILVVLPGKTPVYAEVKRVGDITLLGVATQCVQTRNVNRTSPQTLNSLC
LKNIVKLGGINSI IVPNMRPPI FREPVI FMGADVTHP PAGDEKKPSIAALVASMDAHPRSYSATVR IQQRH
QELISELAAMVREMLIEFYKSTRFKPQRI IFYRDGVSEGFQVLLLEEVRAVQACAMLEKDYQPLISFIV
VQKRHHARLFCSDDRDKVKGSGNI PAGTTVDTVGI THPTEFFDFLCSHAGVQGTSRPSHYHVLWDDNGFTAD
DLQCLTYQLCHTYVRCRTRSVSYPAPAYAHVAFRFRYHLLQDREDRSSGSGSASQSQSEPRSPALMAQAV
KIHHEGMCVMYFA

>Nematostella vectensis Piw1
MTGRARGRARGRSEAAQPGGADAARRPGEQPATGRGRSRGPPAGAVGVGPPKQPQPPQVAPPTQOM
AAMSVEPRGAEPERRERREYGESEPTTRRDGFNKEGSGVTKVGI VSNYFRLETRPQAAIYQYNVFSFPEV
DFKKARFALIGE QRELLGNIRAFDGMVLFPLPKLPDQVTKIMAVRTRRETPEPVEITITLTLNLPADSP
TCLHLFNI I LKRI LKYIDMKQVGRNYYI KNAIAI PKHGLELWPGYTTSI LKYEHS ILLGADVSHKVLRK
QTVLDFLYELYNKMQGRGNFHDEAAKLVGEI VLTRYNNKTYRVDIDWNKRPNSTFTPKGBEISFNDDY
KKNYDFTITDQEQPLLFKPKKRGADDPVLLPELCLTGLSDDMRADF SVMKDLAVHTRLPKARSKD
LNKLISEINNNPDASGELSGWGLFRGNLLDFDGRILPGEKIFQNKGSNYDPKSADWSREIRGAPLHST
VNLENWIVHTNRDSGVATFDQQTFLARVCLGPMGINTTKPRMVLNDDRTLARSYLKALSNEIQADFPQIVVT
IVPSNRKDRYDSIKKLCLEKGVPSQVVSRSLSKKQMLMSVCTKIGIQLNCKLGGEEAWAVDIPKKNLMI
VGIDTYHDSQKGRSVGFFVASLNKPCPTRQREYYSRCTFQHSQQLVDGLKVCMTAALRQWQQINGVLPD
KIIIFYRDGVGDGQLRAVIEHEVPI ILSFTFKQFDGQYDPKFGFTVVKKRIQTRLFMRREARDPDRMLMNP
PGTVVDKEVTRSEWDFDFIVSQSVRQGTVSPHYNV IHDTTGLRDPDHQQLSYKLTHTLYNWP GTVRVPA

PCQYAHKLAFVLVGGQSLHKEPSLKLADKLYFL
>Nematostella vectensis Piwi2
IPLSCNYIRIHCPAQVAVPQYCVSYPEDINRSEFHLHQHPGFRGPKAFDSTMLFPRRLPQPVTQLQ
STRRSDGSPVTVTITFTFRVPPDDAIFOVYNILFRVMKILDMQVQVGRFYFNPKTPAHIPQHNLVLWPGY
ITSLQHYEGGLMLLCDVHRRLLRYSKSDCLDYMMLNMHMSKVGDRFRDEVS KELIGSVVLTYYNNKTYRVDID
WNRKPTSTFTFFHNGEQPQVFFVIEIRDLDPMIIVNRPKKTEQKRGVIEVILLIPELCKLTGLN
DAMRKDFRVMKDI AAHTRVNPMPQRQEA MKKFFVMS INSTPEALEQLTAWNLRDSTLMTEGRQFPPEKII
YGNNTGSGAGDQADWRDRATREKVISAVNLRNNMVFVFTQRDSGKANDFVQTMNKCAPAMG IQVNPQKMNQL
RDDRTETYLRSIRENLHQPQVIVVIFPSTRDDRYAAVKKCCVESPVPSQVIISKTI SNPTKLRSSVVQK
IALQINVLKGGELWALDIPSRSLMVCGLDVIYHDKARGGRSVGLVCSMNRSLTRWYSDVCFQSPGQELID
GLKMLLIKIRKWHVDVNNALPERIIVYRDGVGDGQLKVAVGYEVOQFECCFASFGESYKPKLAVLVQKR
INTRIFSAEPRLGNPPGSGVLDHTVTRKDNWDFFLVSQHVRQGTVTPTHYVVVYDTSNWKPDIMQKLSYK
LTHLYYWPPTVVRVPAPCQYAHKLAYQVQGSIHGQPSQELCDRLFLL

>Nematostella vectensis Piwi3
MTGRARGRARGRENNTQNTRRPGEVPPVSYGNQEVDRVAVGYGRNAIGSSHNPGQLTDFEPPSLSLGNTRNQ
AENSGINTHVSGNDIGFNTVGGVGGQIQALATNHFFALTRMGDQDCLYQYSLEFSPDLEHAKAKRMAIRSE
NTIGEVWLYDKGQMMFLPVQLPDEITCCQGSIRRRDTPGEGVPQVITITRCDVLANSPSFGQVLNTIMAR
IQOTLGMKRIIDRYFYFEDPFVI PQHRIEILPGFRITSIQHHDNGYLLGLDVAHKYLRSETTVVEFLHNLSS
RMPNHDSYTDIATRLQCGEIVLTRYNNKTYKILEIDWDKNPLSTFTLRDGEITFVDYTRQYDRVLEVL
DQPLLLAKPKGRTRPGVQTVYLLPELFCMTGLSADMRSDFNLMRSISDYTRVAPKDRATELTRFMGDFV
HIKNRKKQYRHFVFFVSDQNLTHFSGRVLNPEISIQGRQTYRVNPTGEGDWSREIRSSQMHTAMPQNWA
IVVTLRDSDAATDFLQTMLRVGPPMGVVPVQPHVLQNDQINSYLMALRGLIREENPSMVVVI VPTNRKDR
YDAIKKLCCEIMPVPSQVIVKRTLGRNNMLMSVCTKICIQXSTKLGGEPAWPTPALVLMVVGIDVDFHDK
RSGGQSVGAMVGTMNSSFTKYESRVMFQPGQELSDSLNYAMTAMLRAYHRHNGRLPVKVKVYRDVGGQ
QIEAVIQHEIQQLQAFRSINTGTLYNPELAVTIVQKRILLPRFYAVRPGRGGRDYSNPPPGTLVDTVVTR
PHCFDFFLVVSQSRQGTVPSPHYTYIYNTISGWQAKIFQLLSYKLTHTLYFNWPGTIRVPAPCQYAHKLAY
LVGESLHREPSIQLSDKLYFL

>Amphimedon queenslandica Piwi1
MEDRPLPKTGRGAALAKVLEQASAGRTPGGVQSAAGRAPGGVQYGSPIAMAAPLPMGGRGQSMTPPPHVTIG
TARGGQIQSLGRGHTLSTYGRGQPQTAPBNTQNPAPPTNQSKAGPLADPPIVVPKPIGRGMLLRKLYESQTK
TQSLIPKQSPSPGAPPDQSLQQLQGAVSPSPKTPPTSSPRSPSSPASQATLKANQHSPPGPAHSPQTNL
PVTSAGSPQFTLLSDGEIRQISGRIPLGANYLVVKSRSNVTFQYVMVSFNPPVESKNMRYGMINEHKDLI
GPTRAFDGSVLYLPLKIIDDIIVTRKSI RSTFDGTEITIDITLTVNLEYRECTQLFNIIIRRVLRaidMQEVG
RHYFDKNHPIKIPQHKMELWPGVYVTSIHFFDAEHLLELLDVSHKMLRMDTALDFLYELYSCKDGFQEEAT
RQLVGSIVLTRYNNKTYRVDI IAWDKNPSTFIDHNGRPMFSFIEYRYNTYGRDITDKEQPLLVRPKKNRM
HFRKRGRLPETDTAEVEVQVICLVPESRMTGLTDKARSDFRVMKDLAAHTRITPAQREIAIKKFVTRVNE
SEKAKEELSSWGLSLHPNILETNGRLYKPEVLFVRDGSVAVGLDADWSRQLVKEHVI SAVPLTHWLLLVTK
RDSGKAVDFIEMMKVCPPMGIEVKEPRVIELQTDKTELYLRAIRENMSSSLQVLVAIFPTQRDDRYSSLK
KLCCVECFIPSOVINARITISQQKLRSVTKVALQINVLKGGELWAVKTPLENAMVIGIDVYHDSTGRKGS
VLGFVSSNTKFFTRWYSRVTIQGANQEI GDGLKICFQSSLRKYEINHNLPDRIVI FRDGVGDGQVKTVVE
FEIPQMKSCLAMFGESYKPKIQFVIVQKRIATRLFSHGPGQYENPCPGTVLDHTVTRKGWYDYFLVSQHV
QGTVTPTHYHVLDNAGLKPDMHQVLYKLTHTMYNNWPGTIRVPAPCQYAHKLAFVLVGGQSLHREPSLEISD
RLFFL

>Amphimedon queenslandica Piwi2
MSTRGGGGRGRGVGRGRSRGGGMDTRRPGEGAQAAAPRGVDRDQGGQQVGRGRGRAAAPIQPPQEQQPP
TSTAAPVQQMQMSLGEPRGGRRIERRQDDDIHTKPEHITNKKGSFGNQTPIMSNYLVLNRNPGHAIQY
NVSYNPPVENKRMRLALLYHHEALIGKVHSFDGMVLYLPHRLHNNPEEVI SKTKEGDTIHITIKLTNELS
ANSVCLQLFNILFRKILAKLEMLIGRHYVNPKI PNI IREHSELIWPGFITSIAQYESNVMLCADISHKI
LRDITVLDLDFHSLKSTRDFHTEATKSI VGEIVLTRYNNRTYRVDIDWEKTPASTFKTSTGEEISFITYYK
KDEMEARRGRDPATLGPLLLIPELCTMTGLTEEARANFKIMRDVATYTRQAPPQRIDTLNKFINDVNTNP
DVKSILGGWNLEFEKSLIKFQGRTLPTTEKINQKGGSRF
DAGVAEEF IGTIKRIGPPMGIIMIDEPOVEVLRDNRDTSFLRAVSGQLRDKSTQMVI VVLPQKQKLDYDAVK
KLCCVDAPVPSQCI VSRITLSKQQLMSVATKIVLQMNCKLGGELWALDIPVGVHCVIGIDTYHDSASKGR
SVAAFIASTNSTLTRYYSQTFMFGQSGQELGDNLKACMTMALKKYHSINNTFDRIVVYRDGVGDGQVHLIVK
EHEVVQMLSEFSSTSGDSYKPKFAVVVVKRINTRLFAFDQRGQPSNPLPGTVVDDQVTKPDWYDFFLVSQ
SVRQGTVPSTHFNVIHDTSGLTPDHMQRLTYKLTHTLYYWPPTVVRVPAPCQYAHKLAFVLVGGQSIHKS PSTA
IADRLYFL

>Amphimedon queenslandica Piwi3
MRLALLYHHEALIGKVHSFDGMVLYLPHRLHNNPEEVI SKTKEGDTIHITIKLTNELSANSVCLQLFNIL
LFRKILAKLEMLQIGRHYVNPKI PNI IREHSELIWPGFITSIAQYESNVMLCADISHKILRDTVLDLDFHS
LKSSTRDFHTEATKSI VGEIVLTRYNNRTYRVDIDWEKTPASTFKTSTGEEISFITYYKDEMEARRGRD
PATLGPLLLIPELCTMTGLTEEARANFKIMRDVATYTRQAPPQRIDTLNKFINDVNTNPVKSILGGWNLE
FEKSLIKFQGRTLPTTEKINQKGGSRF

>Nematostella vectensis Dicer1
LQAMFSNERTVLLHPDSELLQALTTKSAGDAFDLERLEMLGDAFLKQAVSIFLYCCYKDGDEGLTKRRK
TSQLSNRALYRVACRLGLPEYLLQNTQLDRVSWTTPSLQAAEVEVPVGS PGKSQKTASNKRCQSASRQPENR
PEMSTLEKPEATARDKALHQSI PDKSVADSV EALIGAYLTTTCGYQALHFLDVLGKVKVLPESPMSTDGPR
SSKYSIFTRPTITIEYNSNPVQLKRFAVQLQGFENRIGYEFNSKLYLIQALTHASYSQNRLTDCYQLEFL
GDALDLFVTELIYSRNTNPLDPELTDLRQALVNNNI FAEI AVKHGFFNKSLFQMSPEWFNKIGVFDHVK
EREARGIQISKDPFLTLSDNDEGIEAPKVLGDFESVAGAI FLDSGMDLVLTWRVYYRMLK

>Nematostella vectensis Dicer2
IGRAGSLRRRRAYKCKIPCVFTNSLPDPGQSCYVAVHLVLT KPDSHERAVRSQGTRLKDPKRPPLSLGI
ILNKSLPKLPAFIIYDRAGEMTVSLKHCHTMTLTSQQALAIQRFHRYVFTDVLNLEKGESSLNFEPKENK
NGCFVLVLRNTDQTTNPDREGQTKNPEYEGQTTNPDREGQTTNPDREGQTTNPDREGQTTNPDREGQTTN
ERCDKILPDGANGSATVTSNELRTPCNANGNKYDIRPEMVNNEENVPLAKQNTHTNTPSWKIAFGFLYS
LEDSVTSFDDPCDPPPPITSDFEVFRDSVVTTAYAPSLRYVADIRYDESPTSPFPSPVAPTFGDYK
DRYGVDLSDRQPLLDVHVSSRLNQLRPRYKTSKGDALPEKSKRSQRSRVSLVPEMCSIHP I PGLW
RDI TNMPSILYRVDALLI AEBELRQFLAV EAGIGMPVWPEGHDL PQLSIEEMVAGPIHPAAAASDVTVQCS
SFDPNATAAKTCSVVNTSVPLETRLGSMILLSDSTDACTWETRSHSNKGSSETPEVGLNGKRVNSAGTCLT
GDVDANVSKDRETQFDPGSSTLILRALTTTSSANDI DHERLEIYGDFAIKYAI SELLYSDFPNVNEGR
SFLRGLRVSNQQLFYLGRSRGLAPLILTKPFEPVGSVWPPGFSSSMRNVHETLDSVPHGVNDVNLIDD
EDSLDHSEIQDISGNECRGNVEPMLLPHTFTVLSDKTVADTIEALIGACLMSSGTNAALRLMRWLDMDV
SSCPDSKLSNPSTESSSEDKARSIQEPCATINHIPSATELSVTDIKPPLTPSFGKMDVQLFKRAVQEPL
STPFI SKQTDLLLRVTRANDQPPATVCSSTAGQGLFENFEPSSSTSVKQMKQLSVHAVDEKLFNDAYST
SEHDLSINKQHQTAVLSEHQLGELALVEASLYGTFRDRDILLQALHTSYPRAYSSVNSYEQLEFLGD
ALLDYLVTRHVLQRFPRLSPGAI TDLRSAVVNNYSACLTIQRDFHKHMRSMSMALFKVVRVFRRLSEI
EEKETRDPQVYSKLLLTVEDGRGGEAIEVPKVLGDLFEALLGALYVDCGRDEELAWSVIYPLLTPIEH
YSVHLPI SPTRQLVEMMPGAATFTCLSNQVIGHHACELVVKG

>Trichoplax adhaerens Dicer1
MDATSQDNVDDHKEELLKPRAYQSELEBAALRSNAIICLNTGSGKTFI AVMLIKLQHEILPKPLDQGGKK
TFFLVNTVPLARQQSDVLRKETPFKVGVDVGDVLDWNKTKWVYELDSQQLVMTADILAQILQHGYIKVS
QINLLIFDECHHAVGNHTYVQIMRDYVYKQKSKPRI PGMTASVFHGKCRIGQIENKIRSLAII LSRVVT
TSYRQDLANHSTKAEEMLIIPYAINLDDNHRHKLSEVSISSIRNI EDWISSLPSQNKRIVDYNNMNTSSKKVL
EGYVKDFKATYEGGLGYGLYLINSVINELVKVINDPSKWKLYSLFLKLYLIQKELQOAGLDHWESVYQQ
PKLFTFLNELHKLNSLGDNRNFCAIIFTEKRCVAYALSSILDKVAEHDNAFSCIKSDFVVGHGTRVSSSL

KDYIIVPVTINSLDGTVDI KLDFAHAKSIVSYEEAGEKRKPKPYTPSSLNSCLVTPAYRSTI PGLQE
IFWVEMDESKTPLSPFNYPKRFANFVFEFKSKYDYEI IDKQPALICRRVNTSFLKLFTRSYLMSEPAVKKT
DITMFPPELVHVPVSVSFWRVLRLCPALMLWRVESLLIAHKLSTRIRMETGIGRENSDTFLLTDTSVRGYAD
SGHGVLPSRRRLQYLNDLTPDITKVPDSDEIRYNSRGNPDNCLILQALTFRGANDSINLERLELLGDSFLKLV
TSVYLYNLRPNSEHGKLGSEARSRRVANINFLVLGKKKGTSAI LSSDDFVSGIDSFKERL TWVPPGYAALEE
SHKVTDKSVADTVEALIGAHVAGTHAGGELNGLIMKWFVGIKINDGSSTIAPPKSTSSNTRSLLLAESDSIFSS
HFGSPPAPKLAFLSDKAI STRNRILPQVSSIQGKIEYSFKNELLLIEAMTHSSYHRNDITGCRYRLEFLGDA
ILDYLVTHCHIQSDSSAEPGEITELRSALVCSNRFAKLAISLNLHKSCHGSPNLFNDMMKQYQSLRQREK
EDMFEEMSINDNDSAQAI VESIKDGDFFDDDDDDDDDDIEPPKSLSDCFEALAGAVFIDSGMNLQTVWEAF
SPFLEPLLKKFKKKNLPLPTPICELHKLIPKDLLEVKKKVLSEGRSLCIEIKDKNICEMATARSYKNAKNF
AASRVLKKLAEK

>Amphimedon queenslandica Dicer2
LGKKKGITSAI LSSDDFVSGIDSFKERL TWVPPGYTALEESHKVTDKSVADTVEALIGAHVAGGLEGGITL
MKWFGIKINDGSSTIAPPKSTSSNTHSLLAESDSIFSSHFRSPPAPKLKSLAPLDAKAI STRNRILPQVSS
SIQGKIEYSFKNELLLIEAMTHSSYHRNDITGCRYRLEFLGDAILDYLVTHCHIQSDSSAEPGRMTELRSA
LVCSNRFAELAISLNLHRSCHGSPNLFNDMMKQYQSLRQREKEDREKLEEMSINDNDSAQVIVESMEDG
DIDDEDEDDDDIEPPKSLSDCFEALAGAVFIDSGMNLQTVWEAFSPFLEPLFEKFKNDPPLTPICELHKL
IPKDLLEVKKKV

>Amphimedon queenslandica Dicer3
MDVTGARSYQLELLDSAIEKNTIVLLGTGAGKTFIAVLLIKQFSHEIILDSFRDNPNKRTIFLVTTVALVT
QQANYIRTHIDLNVGTYYGEMGDVADWRLTKWNESELECNHILVMTRQIFLDMLSHGFI SMSRVNLIIFDECH
HAVKNDPVPQIMKHYNDRYMCNKPHILGLTASIIISGCKPKLEERIRKLEATLNARVETATDLAEVAKY
ATNPQESLVTYGATSNQHGSELTVRLKSVISETLKFMYQAPQSSRAGTVPSRLQCYLEECIYVMENISITS
AVEAVRLIETEIKDMLDEGDAVEGDITLCHLLLLKLSIFSSQCNELLFVGDVNDHSKPKFKLEILLNLR
SQAEDFCGIVFVEQRMATMCLSQITEIKLPGIRCSFIVGHASSSGKIMEKKVSGSGGMNAKKQEVLLKFF
RSGTLNLLIATSVEEGLDRKCNVVIYDFPKTFQSHVQSKGRARAKDSRYLVLIDQTESKCTCDIKEY
AKLEEMLASLCHNRESDEPDEYSRQMLHMKPYQYQPGSPSLPIDSLSLLHRYCQKLPDQYTVMAPDF
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DESSQRSSEIRLPELCKVWPIPASFWLMLKRCVPSIHRVLVGLLAEELAQSISSTFTIGVTEVVEYRCHP
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MADD

>Amphimedon queenslandica Dicer4
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VDIRTVDYTVGRNLYPKFEVWAPNTDDVYTRMSEI EIRLTPDNFTTNGQYHFTLPTPLNVSSGYRIGVYQ
PPDRSVVRPHYVDLPVSI EFNRLADWVLSRLRATS VYLYNTRPHNSNGELAVARDRLVSNYILSYLGGK
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CNDSVPTLHTHVPHQSLIFADSSQIFSSYFGSPPPSLTVSDKERHSIMSEMSSIEKGLQYTFKNKLLLI
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>Nematostella vectensis Drosha
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>Trichoplax adhaerens Drosha
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EESIGVEFKHIRLLAKAFTHPSAGLNHLTIGDYORLEFLGDAILSYM LASHVYRQFPHYREGHLSILRSSL
SNNEGLSKVAEDLLLDKYLTYGVNDRDKILHSKRQKIMADILESFIGALFDKIGISYVEAFVCSVCFSSKIK
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>Amphimedon queenslandica Drosha
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>Nematostella vectensis Pasha
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>Amphimedon queenslandica Pasha
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DSANTSSQDASIQSYKLSGPNFQVTGTCTCRGRKDGQOIAAQKMLKLLHPDLDTWDSLLKIYTMQSKLP
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>Nematostella vectensis Hen1
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>Amphimedon queenslandica Hen1A
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LLQSNQNSLQPLITDYLRHRRSRPLKIQLFKGSI DEVD SRMIDCDLFCIEVIEHLYPSVLERVPAAI FQKL
RPQVVIISTPNSDFNVLPPELVGFRHFDHKFEWSRQEFQA
>Amphimedon queenslandica Hen1B
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CDLFCIEVIEHLYPSVLERVPAAI FQKL RPQAVIISTPNSDFNVLPPELVGFRHFDHKFEWSRQEFQACG
VGDPPANMTYLGHC SQIAIFRRIEKEEEEEEREVEDEEDSNEEKEEERLGS PYELIYECEFPYEPDPPTQS
ERLSNEAEYYLRVLRREERNRYLEIGGEPTIENGSHENSGLTESPRHRDFIRIELNELLMFPVIQELTNSV
TDISEALRQHSSMLSEDSMNAIFYEESSEEEEEEREAPP S DTPAAVIEEESWD