

Alignment of cyclin motif from A-type cyclins

Alignments of A-type and B-type cyclins used in the construction of the phylogenetic trees. The GCG pileup program and ClustalW program were used to produce the alignments. Below the sequences are marked identical (*), highly similar (:.) and similar (.) amino acids.

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Human A2      NEVPDYHEDIHTYLREMEVKCKPKVGYMKKQPDITNSMRAILVDWLVEVGEEYKLQNETL
Hamster A2    NEVPDYHEDIHTYLREMEIKCKPKVGYMKKQPDITNSMRAILVDWLVEVGEEYKLQNETL
Mouse A2      NEVPDYQEDIHTYLREMEVKCKPKVGYMKRQPDITNSMRAILVDWLVEVGEEYKLQNETL
Chicken A2    NNVPDYVSDIHTYLREMEVKCKPKIGYMKKQPDITNNMRAILVDWLVEVGEEYKLQNETL
Xenopus A2    NNVADYAKEIHTYLREMEVKCKPKAGYMQKQPDITGNMRAILVDWLVEVGEEYKLQNETL
Zebra fish A2 NEVSDYAAEIHHTLREMEVSKPKAGYMRKQPDITNSMRAILVDWLVEVGEEYKLQNETL
Gold fish A1  LCVPEYAEDIHRYLRECEVKYRPPKGYMRKQPDITNCMRVILVDWLVEVGEEYKLCSETL
Zebra fish A1 LCVSEYAEDIHRYLRECEVKYRPPKGYMRKQPDITNCMRVILVDWLVEVGEEYKLCSETL
Human A1      INVTEYAEIIYQYLREAEIRHRPKAHYMKKQPDITEGMRTILVDWLVEVGEEYKLRAETL
Mouse A1      INVTEYAEIIHRYLPEAEVRHRPKAHYMRKQPDITEGMRAILVDWLVEVGEEYKLRTETL
Xenopus A1    VAVSEYIHEIHRYLREAEIKHRPKAYYMRKQPDITSAMRTILVDWLVEVGEEYKLHTETL
Mussel A      LTAPEYEEDIYSYLREAEAKNRAPKGYMRKQPDITSSMRSILVDWLVEVAEEYKLHRETL
Clam A        LTVPEYEEDIYNYLRQAEMKNRAKPGYMRKQTDITSMRCILVDWLVEVSEEDKLHRETL
Limpet A      LSVPEYAEDIYKHLREAESRHRPKGYMKKQPDITNSMRSILVDWLMVEVSEYKLHRETL
H. pulcherrimus A LGEPEYAEIIYQYLKTAESKHRPKHGMYMRKQPDITNSMRCILVDWLVEVSEYRLHNETL
S. granularis A LGEPEYSEIIYQYLKTAELKHRPKHGMYMRKQPDITNNMRCILVDWLVEVSEYRLHNETL
Starfish A    FGVPEYAEDIYEYLREAE LRNRPKGYMRKQPDITSGMRSILVDWLIEVGEEYRLHNETL
Drosophila A1 LEVVQYQMDILEYFRESEKHRPKPRYMRRQKDISHNMRSILVDWLVEVSEYKLDTETL
H. robusta A  YSLPEYRDDILTYGKEAQRYMAKANMYERQSDINHSMRSILVDWLMVEVADEYKLKRETF
C. elegans A  FSSEFFPDIIKYMLHRQTKNRASHECFDIQSQVNEEMRTILIDWFSVVKEYNFQKETF
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Human A2      HLAVNIDRFLSSMSVLRGKLQLVGTAAMLLASKFEEIYPPEVAEFVYITDDTYTKKQVL
Hamster A2    HLAVNIDRFLSSMSVLRGKLQLVGTAAMLLASKFEEIYPPEVAEFVYITDDTYSKKQVL
Mouse A2      HLAVNIDRFLSSMSVLRGKLQLVGTAAMLLASKFEEIYPPEVAEFVYITDDTYSKKQVL
Chicken A2    HLAVNIDRFLSSMSVLRGKLQLVGTAAMLLASKFEEIYPPEVAEFVYITDDTYNKKQVL
Xenopus A2    YLAVNYIDRFLSSMSVLRGKLQLVGTAAMLLASKFEEIYPPEVAEFVYITDDTYTKKQVL
Zebra fish A2 YLAVNYIDRFLSSMSVLMGRLQLVGTAAMLLASKFEEIYPPKGAEFVYITDDTYTKKQVL
Gold fish A1  FLAVNYLDRFLSCMSVLRGKLQLVGTAAVLLAAKYEEVYPPEVDEFVYITDDTYTKKQLL
Zebra fish A1 YLAVNYLDRFLSCMSVLRGKLQLVGTAAILLAGKYEEVYPPEVDEFV -SSGXHYTKKQLL
Human A1      YLAVNFLDRFLSCMSVLRGKLQLVGTAAMLLASKYEEIYPPEVDEFVYITDDTYTKRQLL
Mouse A1      YLAVNFLDRFLSCMSVLRGKLQLVGTAAILLASKYEEIYPPDVDEFVYITDDTYTKRQLL
Xenopus A1    YLAMNYLDRFLSCMSVLRGKLQLVGTAAILLASKYEEIYPPDVDEFVYITDDTYSKKQLL
Mussel A      FLAVNYIDRFLSKISVLRGKLQLVGAASMFLAAKYEEIYPPDVTEFAYITDDTYDKKQIL
Clam A        FLGVNYIDRFLSKISVLRGKLQLVGAASMFLAAKYEEIYPPDVKEFAYITDDTYTSQQVL
Limpet A      FLAINYIDRFLSQMSVLRGKLQLVGAASMFIAASKYEEIYPPEVSEFVYITDDTYEQKQVL
H. pulcherrimus A YLAAAFIDRFLSQMSVLRACLQLVGTASMFVASKYEEIYPPDVKEFVYITDDTYSIKQVL
S. granularis A YLAAAFIDRFLSQMSVLRACLQLVGTASMFVASKYEEIYPPDVKEFIYITDDTYSIKQVL
Starfish A    YLAVSYIDRFLSQMSVLRSKLQLVGAASMFLAAKFEEIYPPEVNEFVYITDDTYTVKQVL
Drosophila A1 YLSVFYLDRLFLSQMAVVRSKLQLVGTAAAMYIAAKYEEIYPPEVGEFVFLTDDSYTKAQVL
H. robusta A  FLAVNYIDRFLSMMSVIRCLQLLGAAAMFIAAKYEEIYPPDVAEFVYITDDTYTMKQVL
C. elegans A  HLAVSLVDRALSMFNIDKMRFLQLVGTTSMMIAVKYEEIFPPEIEDFALITDNTYRVPDIL
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Human A2      RMEHLVLKVLTFDLAAPTQVNF-----LTQYFL---HQQPANCKVESLAMFLGELSLI
Hamster A2    RMEHLVLKVLAFDLAAPTQVNF-----LNQYFL---HQQPANCKVESLAMFLGELSLI
Mouse A2      RMEHLVLKVLAFDLAAPTQVNF-----LTQYFL---HLQPANCKVESLAMFLGELSLI
Chicken A2    RMEHLILKVLSDFLAAPTINQF-----LTQYFL---HQQ- TNAKVESLSMYLGELTLI
Xenopus A2    KMEHLVLKVLSDFLAAPTILQY-----LNQYF---QIHPVSPKVESLSMFLGELSLV
Zebra fish A2 RMEHLVLTVLSDFLAAPTINQF-----LTQYFL---H- QPVSSKVESLSMFLGELSLI
Gold fish A1  RMEQHLLRVLAFDMTAPTIVHF-----LMQY-T---LEGHICARTVNLALYLSELSLL
Zebra fish A1 RMEQHLLRVLAFDMTAPTIVHF-----LMQY-S---LEEHVCARTLNLALYLSELSLL
Human A1      KMEHLLLKVLAFDLTVPTTNQF-----LLQY-L---RRQGVCVRTENLAKYVAELSLL
Mouse A1      RMEHLLLKVLAFDLTVPTTNQF-----LLQY-L---RRQGVCI RTENLAKYVAELSLL
Xenopus A1    RMEHVLLKVLAFDLTVPTVNF-----LLQY-L---QRHAVSVKMEHLAMYMAELTLL
Mussel A      RMEHLILKVLAFDVAIPTTNWF-----CESF-L---KSIDAEELKSLTMFLSELTLI
Clam A        RMEHLILKVLTFDVAVPTTNWF-----CEDF-L---KSCDADDKLSLTMFLTELTLI
Limpet A      RMEHLILKVLSDVAQPTINWF-----TDY-A---KMA DTDETKSLSMYLSSELTLV
H. pulcherrimus A RMEHLILKVLSDFLAAPTINSF-----LPRF-I---KAAQANSKTEHLTQYLAELTLQ
S. granularis A RMEHLILKVLSDFLAAPTINAF-----LPRF-L---KAAQANSKTEHLTQYLAELTLQ
Starfish A    RMEHLILKVLSDFAVPTANAF-----LSRY-L---KA AKADSRNGTSSQYLAELTLP
Drosophila A1 RMEQVILKILSFDLCTPTAYVF-----INTYAV---LCDMPEKLYMTLYISELSLM
H. robusta A  QMEQA ILKTLNFLVAAPTPNYFCCDLLDRLGAYKKGPNGVCDDGGRWNSLAMYLETTTV
C. elegans A  LMERFLLGKFDVAVPTSSWFG-----TCFAK---RMN-FTKKMRNTVHYLLELSLI
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Human A2	DADPYLKYLPSVIAGAAFHLLALYTVTGGQSWPESLIRKTGYTTLESCLKPCLMDLHQTYLKAP
Hamster A2	DADPYLKYLPSLIAGAAFHLLALYTVTGGQSWPESLVQKTGYTTLESCLKPCLMDLHQTYLRAA
Mouse A2	DADPYLKYLPSLIAGAAFHLLALYTVTGGQSWPESLAQQTGYTTLESCLKPCLVDLHQTYLKPP
Chicken A2	DADPYLKYLPSVIAAAAFHLASYTITGQTWPESLCKVTGYTLEHIKPCCLMDLHRTYLKAA
Xenopus A2	DADPFLRYLPSVAAAAFVIANCTINERTWSDPLVEYTSYTTLETCLKPCILDLYQTYLSAA
Zebra fish A2	DCDPFLKYLPSQMAAAAFILANHTLASGWSKSLVDLTGYSLEDLLPCVQDLHQTYLAAS
Gold fish A1	EVDPFVQYLPSKTAAYCLANYTLNGVLWPNLYAFTGYSLAVIIPCLMELHKLHLGAA
Zebra fish A1	EVDPFVQYLPSKTAAYCLANYTLNGALWPNLYAFTGYSLAVIGPCLKELHKLHLGAG
Human A1	EADPFLKYLPSLIAGAAAFCLANYTVNKHFWPETLAAFTGYSLSEIVPCLSELHKAYLDIP
Mouse A1	EADPFLKYLPSLVAAAYCLANYIVNRHFWPETLAAFTGYSLNEIVPCLSELHKACLSIP
Xenopus A1	EVEPFLKYVPSLTAAAYCLANYALNKVFWPDTLEAFTGYALSDIAPCLSDLHQFCLGAP
Mussel A	EMDSYLKYVPSITASACICLARYSLGLEPWPQSLVKKTGYEVGHFVDCLKELHKTYQAAE
Clam A	DMDAYLKYLPSITAAALCLARYSLGIEPWPQNLVKKTGYEIGHFVDCLKDLHKTSLGAE
Limpet A	DADPYLKYLPSITAAASLCLANITLGSEPWPSSSLAKESKYEISEFSECLQEMYQTYLNAP
H. pulcherrimus A	EYD-FIKYAPSMIAASAVCLANHTLNNEEWTPMAHYTDYQLGDIYPCVQDLHQLFIKAP
S. granularis A	KYD-FIKYVPSMIAASRVCLANHTLNNEGWTPTMAHYTDYQLADIYVCT-DLHQLFIKAP
Starfish A	DCE-YIKYIPSTIAAAVCLANYTLSGTAWTPMLEKHSYGNLEDIAPCVRDLLKFTFNAP
Drosophila A1	EGETYLQYLPSLMSSASVALARHILGMEMWTPRLEEITTYKLEDLKTVVHLCHTHKTAK
H. robusta A	FGDCFLKFSPSMISTSCVALSHYLINMTGCMSELSRITSYTVFSLSECLNSIFTLLHNSP
C. elegans A	DVH-FLRYRPSDIAAAACCFANLQADVESWPQKMVDDTGISTDFVDVLRDLHRMYLNAS

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Human A2	QHAQQSIREKYKNSKYHGVS
Hamster A2	QHTQQSIREKYKHSKYHGVS
Mouse A2	QHAQQSIREKYKHSKYHSVS
Chicken A2	QHTQQSIREKYKSTKYHAVS
Xenopus A2	SHQQQAVREKYKAPKNHAVS
Zebra fish A2	QHAQQAVREKYKGSKYHEVS
Gold fish A1	GRPQQAIQEKYKGSKYCGVS
Zebra fish A1	SRPQQAIQEKYKSSKYHGVS
Human A1	HRPQQAIREKYKASKYLCVS
Mouse A1	HRPQQAIREKYKASKYLHVS
Xenopus A1	YQAQQAIREKYKTTKYMQVS
Mussel A	SHPQQAVQEKYKQDKFQQVS
Clam A	SHQQQAVQEKYKQDKYHQVS
Limpet A	NHPQQAIREKYKSSKYQQVS
H. pulcherrimus A	TMEQQAVREKYKSQKYSYGAS
S. granularis A	TMDQQAVREKYKSQKYSYGAS
Starfish A	SQSQQAAQEKYKSQRYNSVS
Drosophila A1	ELNTQAMREKYNRDITYKKVA
H. robusta A	NVPQQALRVKYNSEKYHFVA
C. elegans A	TADFKSIFYNYSETAQMEVA

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Alignment of cyclin motif from B- and B3-type cyclins

H31G24	FNC - -MAEDIYNYLVHHEKKYVLDDSFING - -GNVNSKMRRILVDWLQVHLRFHLLTPET
Y43E12A	LNCIAMAEDIYNYLVHHEKKYVLDDSFING - -GNVNSKMRRILVDWLQVHLRFHLLTPET
ZC168	TKCLAMADDIYKYLVHHEKKYLLEECFMEG - -GEPTPKMRRILVDWLQVHVHFRHLLTPET
Chicken B2	QLCSDYVKDIYLYLRQLELQSSVPHYLDGKT - -INGRMRAILVDWLQVHVSFRFLLQET
Human B2	QLCSDYVKDIYQYLRQLEVLQSPHFLDGRD - -INGRMRAILVDWLQVHVSFRFLLQET
Xenopus B2	QLCSDYVMDIYNYLKQLEVQQSVHPCYLEGKE - -INERMRAILVDWLQVHVSFRFLLQET
Xenopus B5	QLCADYVKDIYSYLRQLEVQQAVRPRHLQGM - -INDRMRAILVDWLQVHLKFQLLQET
O. latipes B2	QLCSQYVKDIYKYLVHHEKKYVPRANYMQGYE - -VTERMRAILVDWLQVHVSFRFLLQET
Human B1	NLCSEYVKDIYAYLRQLEEQAVRPKYLLGRE - -VTGNMRAILVDWLQVQVMKFRLLQET
Xenopus B1	MLCSEYVKDIYAYLRSLQDAQAVRQNYLHGQE - -VTGNMRAILVDWLQVQVMKFRLLQET
Zebra fish B1	MLCSEYVKDIYLYLRQLETEQAVRPKYLAGKE - -VTGNMRAILVDWLQVQVQIKFRLLQET
O. latipes B1	MLCSEYVKDIYKYLRQLEMEQSVKPNYLEGQE - -ITGNMRAILVDWLQVGLKFRLLQET
Xenopus B4	MLCSDYVKDIYCYLRNLEAEQAIGPHYLDGQE - -INGNMRAILVDWLQVQVQLRFKLLQET
Limpet B	QLVSDYVNDIYHYMRHLEETFAVKANFLEGQE - -VTGKMRSILVDWLQVHHRFHLLQET
Clam B	QLVSEYVNDIYDMRDLEGKYPYRHNLYENQE - -ITGKMRAILVDWLQVHHRFHLLQET
Sea urchin B	QLCSEYAKDIYLYLRRLLEVEMMVANYLDRQETQITGRMRLILVDWLQVHLRFHLLQET
Starfish B	QLCSEFVNDIYQYMRKLREFFKVRTDYMTIQE - -ITERMRSILVDWLQVHLRFHLLQET
Silkworm B	LLMSMYIKDIYKYLVHHEKKYVIEPDHLKKQ - -TVITGKMRAILVDWLQVQVQVSLVLET
Drosophila B	VLVSEYVNDIYDYLYQVELEQPIHKDHLAQ - -KEVSHKMRAVLIDWLQVHHRFHLLQET
Chicken B3	YANAAYAKEIFDYMREREKFL - PDYME - KQSDISRDMRAILVDWMVEVQENFELNHET
Xenopus B3	FSNSEYATDIFSVMRDREEKFL - PNYLE - MQTDISKDMRAILVDWMVEVQENFELNHET
Human B3	SFNPYMAKEIFSVMKEREKFFIL - TDYMN - RQIEITSMDRAILVDWLQVQVVFEMTHET
Drosophila B3	FQVSHYAMDIFNYLVHREAEFPI - ADYMP - RQIHLTTWMRTLLVDWMVEVQETFELNHET
C. elegans B3	DSISDYAQQIFDYVRHREAFVR - RKYLYH - KHPEVDVKTRAILIDWMVEIQTETFELNHET

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H31G24	LHLTIFVLDRIIVKN - IVSKAEFQLLGVAALFVASKFEDIYLPDILEYELITENTFSKKQ
Y43E12A	LHLTIFVLDRIIVKN - IVSKAEFQLLGVAALFVASKFEDIYLPDILEYELITENTFSKKQ
ZC168	LHLTVFILDRLMLQKK - VTSKADLQLLGISAMFVASKFEEVYLPDIHDEYELITENTFSKKQ
Chicken B2	LYMCVAVMDRFLQSH - VPRKRLQLVGVTALLLASKYEEMYSPIADFFVYITDNAYNSAE
Human B2	LYMCVGIMDRFLQVQ - VSRKRLQLVGITALLLASKYEEMFSPNIEDFFVYITDNAYSSQ
Xenopus B2	LYMGVAIMDRFLQVQ - VSRKRLQLVGVTSLLIASKYEEMYPPEVADFFVYITDNAYTASQ
Xenopus B5	LYMAIAIMDRFLQVQ - ISRSKLQLVGVTSLFIASKYEEMYPPEISDFVYITDNAYSKTQ
O. latipes B2	LYLTVAILDRFLQVHP - VSRKRLQLVGVTAMLVACKYEEMYPPEVADFFVYITDNAYTKSQ
Human B1	MYMTVSIIDRFMQNNC - VPKKMLQLVGVTAMFIASKYEEMYPPEIGDFAFVTDNTYTKHQ
Xenopus B1	MFMTVGIIDRFLEHP - VPKKMLQLVGVTAMFLAAKYEEMYPPEIGDFFVTDNTYTKAQ
Zebra fish B1	MYMTVGIIDRFLEHP - VPKKMLQLVGVTAMFLAAKYEEMYPPEIGDFAFVTDNTYTKAQ
O. latipes B1	MYMTVGIIDRFLEHP - VPKKMLQLVGVTAMFLAAKYEEMYPPEISDFAYVTDNTYTKAQ
Xenopus B4	MSMTVSILDRFLQENP - VPKKMLQLAGVSAMFIACKYEEMYPPEISDFVYITDNAYTKSQ
Limpet B	LYLTVSIIDRFLEHP - ISRNKLQLVGVTSMALLASKYEEMYPPEVADFFVYITDNAYTKAD
Clam B	LYLTVAIIDRLLQESP - VPRNKLQLVGVTSMALLASKYEEMYPPEVADFFVYITDNAYTKKE
Sea urchin B	LFLTQVILDRFLAEHS - VSKGKLQLVGVTAMFIASKYEEMYPPEINDFFVYITDNAYTKAQ
Starfish B	LFLTQVILDRFLAEHS - VSKGKLQLVGVTSMALLASKYEEMYPPEIGDFFVYITDNAYTKAQ
Silkworm B	FHLTVGIIDRYLQVVPNVQRNQLQLVGVTAMFIASKYEEMYPPEVADFFVYITDNAYTKSD
Drosophila B	FQLAVAIIDRYLQVVKDKTKRYLQLVGVTALFIATKYEELFPPAIGDFVYITDDTYTARQ
Chicken B3	LYLAVKLVLDHYLVEVV - SMRDKLQLIGSTAVLIASKFEERCPCVDDFLYICDDAYKREE
Xenopus B3	LYLAVKLVLDHYLVEVV - VMKEKLQLIGSTAVLIASKFEERCPCVDDFLYICDDAYKREE
Human B3	LYLAVKLVLDHYLVEVV - CKKDKLQLLGATAFMIAAKFEEHNSPRVDDFFVYICDDNYQRSE
Drosophila B3	LYLAVKLVLDHYLVEVV - INKEKLQLLGATAFMIAAKFEEHNSPRVDDFFVYICDDNYQRSE
C. elegans B3	LYNAVKLTDMYLCKTKNVDKNTIQKLACVAIFIAAKYDERSPLVDDLIYLSGDRFSRDE

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H31G24	ILAMEQTILNALNFDLSCPSSLVFLRYISKTLTENDVNPIDKETFYVHNISKCLGELAL
Y43E12A	IMAMEQTILNALNFDLSCPSSLVFLRCISKTLTENDVNPIDKEAFYVHNISKCLGELAL
ZC168	ILAMEQTILNSLNFDLSCPSSLVFLRCLSRILSENDASPIDNQAFCYTYNISKCLGELAL
Chicken B2	VREMEITILKELNFDLGRPLPLHFLRRASK-----AGEADAEQ----HTLAKYLMELTL
Human B2	IREMETLILKELKFELGRPLPLHFLRRASK-----AGEVDVEQ----HTLAKYLMELTL
Xenopus B2	IREMEMIILRLLNFDLGRPLPLHFLRRASK-----SCSADAEQ----HTLAKYLMELTL
Xenopus B5	IREMEMMILKEINFDLGRPLPLNFLRRASK-----CCSADAGQ----HTLAKYFMELTL
O. latipes B2	IVEMEQVILRSLSFQLGRPLPLHFLRRATK-----VAGADVEK----HTLAKYLMELTL
Human B1	IRQMEMKILRALNFDLGRPLPLHFLRRASK-----IGEVDVEQ----HTLAKYLMELTM
Xenopus B1	IRDMEMKILRVLKFAIGRPLPLHFLRRASK-----IGEVTAEQ----HSLAKYLMELVM
Zebra fish B1	IREMEMKVLRLNFGFGRPLPLQLFRRASK-----IGDVTAEH----HTLAKYFLELTM
O. latipes B1	IRDMEMTILRVLKFQLGRPLPLQLFRRASK-----IYEVTAEQ----HTLAKYLLLELSM
Xenopus B4	IRNMEMQILRLNFDIGRPLPLHFLRRASK-----IGEVDVSH----HTLAKYLIELVM
Limpet B	IRTMEQTILKTLDFSFGKPLCLHFLRRNSK-----AGQVDATK----HTLAKYLMELTI
Clam B	ILEMEQHILKKNFSFGRPLCLHFLRRDSK-----AGQVDANK----HTLAKYLMELTI
Sea urchin B	IRQMEIAMLKGLKYKLGKPLCLHFLRRNSK-----AAGVDAQK----HTLAKYLMELTL
Starfish B	IRSMECNILRRDLFSLGKPLCIHFLRRNSK-----AGGVDGQK----HTMAKYLMELTL
Silkworm B	VFCERDIMCKLGFCLARPIPLSFLRRFVK-----AARGTSRN----HHLAKYFVDLCL
Drosophila B	IRQMELQIFKAIDCNLSRPLPIHFLRRYSK-----AAGAEDEH----HTMSKYFIELAS
Chicken B3	LIAMETSILRTLNFIDINIPYRFLRRFAK-----CARASMET-----LTLARFYCEMTL
Xenopus B3	VIAMEMEILQKLYFDINIPVYRFLRRFAK-----CAHATMET-----LTLARYICELTL
Human B3	VLSMEINILNVLKCDINIPYHFLRRYAR-----CIHTNMKT-----LTLARYICEMTL
Drosophila B3	LVRMERETLRVIKYDLGIPLSYRFLRRYAR-----CAKVPMPT-----LTLARYILELSL
C. elegans B3	LLAMERELFATVGVDLGSPLSYRFLRRFGR-----VCRVDMKT-----LTMGRFILETSL
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H31G24	LDSVMSTVPRSHVASASMIITLNIISVDGINPKT-----AASMIRKQFGASKQDIYDAIS
Y43E12A	LDSVMSTVPRSHVASASMIITLNVITVDGINPKT-----AASMIRKQLGASKQDIYDAIA
ZC168	LDSVMASSTPRSHIASASMIIALEVHPVDGIEAEN-----AVSVICKQLGASKKVIEDAVA
Chicken B2	IDYDMVHYHPSEIAAAALCLSQKVLGHD--K-----WGTKQQYYTGGAEDSLAMTMK
Human B2	IDYDMVHYHPSKVAASCLSQKVLGQG--K-----WNLKQQYYTYGTENEVLEVMQ
Xenopus B2	IDYEMVHIKPSEIAAAALCLSQKILGQG--T-----WGTTQHYTYGTTEGDLQLIMK
Xenopus B5	LDYDMVHFHPSAIAAAALCLTQKVLNMG--T-----WDAALQFYTGYSQDDLSPMK
O. latipes B2	LDYHVMHYRPSEVAAAAALCLSQLLLDGL--P-----WSLTQQQYSTYEEQHLKPIMQ
Human B1	LDYDMVHFPPSQIAAGAFCLALKILDNG--E-----WTPTLQHYLSYTEESLLPVMQ
Xenopus B1	VDYDMVHFTPSQIAAASSCLSLKILNAG--D-----WTPTLHHYMAyseEDLVPVMQ
Zebra fish B1	VDYDMVHYPPSQMASAAYALTlKVFNCG--D-----WTPTLQHYMGYTEDELVPVMQ
O. latipes B1	VDYDMAHFSPSLVASAALALTlKVLDAG--E-----WDVTLQHYMEYTAETLTPVMA
Xenopus B4	TDYDMVHIPPSQLAAAAFCLAMKILNSG--E-----WTPTLEHYMAYKESSLTPVMQ
Limpet B	IEYDMVHCNPSIIAAALCLSMKVLD--DSQ-----WSETLAHYSNYSEKEIYPVMQ
Clam B	TEYDMVQYLPSKIAAAALCLSMKLLD--STH-----WTETLTHYSSYCEKDLVSTMQ
Sea urchin B	PEYSMVQYSPSEIAAAAIYLSMTLLDPETHSS-----WCPKMTHYSMYSEDHLRPVQ
Starfish B	PEYAFVPYDPSEIAAAALCLSSKILEPD--ME-----WGTTLVHYSAYSEDHLMPIVQ
Silkworm B	VEYTMAYHRPSEIAAAALCLSLHLLSSKTLSEV-----WTSTLSYSGYDLHDIDPIIR
Drosophila B	VDYEMATYRPSEIAAASLFLSLHLLNGNHRAGTGfNDRHWTPTLTFYSRYSAHLRPITR
Chicken B3	QEYDYARERPSKLAASSLLLALTMKN---LG-----GWTPTLEYSGYCAQDLHPLVK
Xenopus B3	QEYDFVQERASKMAASCLLLALQMKG---LG-----RWTATLHYSGYQTNDLPLVK
Human B3	QEYHYVQEKASKLAAASLLLALYMKK---LG-----YWVPFLEHYSYGYSISELHPLVR
Drosophila B3	MDYANISFSDSQMASAALFMALRMHGGPGQLDKQ---TWTSTLIYYTGyQLADFAEIVT
C. elegans B3	MVYEYAMVSQSRLAAAFVLAMRMLDKNNEYE-----WNPVLEKYSgFTGEEVMPLVE
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H31G24
Y43E12A
ZC168
Chicken B2
Human B2
Xenopus B2
Xenopus B5
O. latipes B2
Human B1
Xenopus B1
Zebra fish B1
O. latipes B1
Xenopus B4
Limpet B
Clam B
Sea urchin B
Starfish B
Silkworm B
Drosophila B
Chicken B3
Xenopus B3
Human B3
Drosophila B3
C. elegans B3