G.aculeatus eef2k eukaryotic elongation factor 2 kinase isoform X D.rerio eef2k eukaryotic elongation factor 2 kinase S.salar LOC106589523 eukaryotic elongation factor 2 kinase isofor S.salar LOC106609006 eukaryotic elongation factor 2 kinase isoform C.carcharias eef2k eukaryotic elongation factor 2 kinase isoform C.mydas EEF2K eukaryotic elongation factor 2 kinase isoform X4 X.laevis LOC108703159 eukaryotic elongation factor 2 kinase isoform X4 X.laevis eef2k.L eukaryotic elongation factor 2 kinase VV S.townsendi EEF2K LOW QUALITY PROTEIN eukaryotic elongation factor 2 kinase isoform X1 ILG.gallus EEF2K eukaryotic elongation factor 2 kinase isoform X1 ILG.sallus EEF2K eukaryotic elongation factor 2 kinase isoform X1 ILG.sallus EEF2K eukaryotic elongation factor 2 kinase IL H.sapiens EEF2K eukaryotic elongation factor 2 kinase IL H.sapiens EEF2K eukaryotic elongation factor 2 kinase IL H.sapiens EEF2K eukaryotic elongation factor 2 kinase IL L.sapiens EEF2K eukaryotic elongation factor 2 kinase II L.sapiens EEF2K eukaryotic elongation factor 2 kinase II L.sapiens EEF2K eukaryotic elongation factor 2 kinase II L.sapie

G.aculeatus eef2k eukaryotic elongation factor 2 kinase isoform X D.rerio eef2k eukaryotic elongation factor 2 kinase S.salar LOC106589523 eukaryotic elongation factor 2 kinase isofor S.salar LOC106609006 eukaryotic elongation factor 2 kinase isoform C.carcharias eef2k eukaryotic elongation factor 2 kinase isoform C.mydas EEF2K eukaryotic elongation factor 2 kinase isoform X4 X.laevis LOC108703159 eukaryotic elongation factor 2 kinase isoform X4 X.laevis eef2k.L eukaryotic elongation factor 2 kinase S.townsendi EEF2K LOW QUALITY PROTEIN eukaryotic elongation factor E.caballus EEF2K eukaryotic elongation factor 2 kinase isoform X1 G.gallus EEF2K eukaryotic elongation factor 2 kinase isoform X1 F.catus EEF2K eukaryotic elongation factor 2 kinase H.sapiens EEF2K eukaryotic elongation factor 2 kinase H.sapiens EEF2K eukaryotic elongation factor 2 kinase H.sapiens EEF2K eukaryotic elongation factor 2 kinase dupelabel1 consensus

MAD. EDLMFRMEGLDNISSG	.KDQGSDYNKADSDEEDNFYICPITDDPASHQKSNKKNPGFF .KAASGKYHDGDSDEEDAYYICPITDDPVSVKATSDKVTNYY .RAGPDGDSDADSDDDEGYFICPITDDPRSHQNVNSKVNNYY .EVTSGNYLDADSDDEDNYYIYPITDDPVSNKSASSKVDNYY .GAGHDGDSEADSDEEESYFICPITDDPRSHQNVNSKVNNYY .RAGHDGDSDGDSDDEEGYFICPITDDPSSNQNVNSKVNKYY .RAGHDGDSDGDSDDEEGYFICPITDDPSSNQNVNSKVNKYY .RAGHDGDSDGDSDDEEGYFICPITDDPSSNQNVNSKVNKYY .RAGHDGDSDGDSDDEEGYFICPITDDPSSNQNVNSKVNKYY	FTKLVKQSEYGTSSSPRNSFK YANLVKNEQYSSSSSPRNSFHFK YSNLMKSEQYSSSGSPASSFHFK YSNLAKTEQYSSSSSPRNSFNYRNGTQH RSKHGSVVDR: YSNLTKSEQYGSSGSPAGSFHFK YSNLTKSERYSSSGSPANSFHFK YSNLTKSERYSSSGSPANSFHFK YSNLTKSERYSSSGSPANSFHFK ** * ********! **! ***	EAWKHAIQKAKQMPDPWAEFHLEDIETEHATEAWKHAIEKAKHMPDPWAEFHLEDIETEHATEAWKHAIEKAKHMPDPWAEFHLEDIETEHATEAWKHAIEKAKHMPDPWAEFHLEDIATECATRHRSAACLGVLYRPISRETWKHAIEKAKHMPDPWAEFHLEDIETEHATEAWKHAIEKAKHMPDPWAEFHLEDIATECATEAWKHAIQKAKHMPDPWAEFHLEDIATERATEAWKHAIQKAKHMPDPWAEFHLEDIATERATEAWKHAIQKAKHMPDPWAEFHLEDIATERAT***!**!**!!*!!*!!*!***!!	$RHRYNAVSGQWFKDDVLIKMASQAFGRGAMRECYRTKKLSNFSHKQQWK\\RYRYNAVTGEWVEDEVLIKMAAQPFGRGAMRECFRTKKLSNFLHTQNWK\\ RPQCATRHRYNAVTGEWLEDEVLIKMASQPFGRGAMRECFRTKKLSNFLHTQQWK\\RYRYNAVTGDWVEDEVLIKMASQPFGRGAMRECFRTKKLSNFLHTQNWK\\RHRYNAVTGEWLQDEVLIKMASQPFGRGAMRECFRTKKLSNFLHTQQWK\\RHRYNAVTGEWLDDEVLIKMASQPFGRGAMRECFRTKKLSNFLHTQQWK\\RHRYNAVTGEWLDDEVLIKMASQPFGRGAMRECFRTKKLSNFLHAQQWK\\RHRYNAVTGEWLDDEVLIKMASQPFGRGAMRECFRTKKLSNFLHAQQWK\\RHRYNAVTGEWLDDEVLIKMASQPFGRGAMRECFRTKKLSNFLHAQQWK$	KSAYNYVAKRYLETVDRDV.YFED.VRLQMEAKLWGEEYNRHKPPKQVDIMQMCIIEMKDR KGAFNSLAKAIFYRGTVNREAIYAEGVVRLQMEAKLWGEEYNRHKPPKQVDIVQTCIIEMKNR KGASNYVAKRYIESVDRDV.YFED.VCLQMEAKLWGEEYNRHKPPKQVDIMQMCVVELKER KAAYNYVAKQYIESVGREV.YFED.VRLQMEAKLWGEEYNRHKPPKQVDIVQTCIIEMKNR KGASNYVAKRYIESVDRDV.YFED.VRLQMEAKLWGEEYNRHKPPKQVDIMQMCVVELKDR KGASNYVAKRYIEPVDRDV.YFED.VRLQMEAKLWGEEYNRHKPPKQVDIMQMCIIELKDR KGASNYVAKRYIEPVDRDV.YFED.VRLQMEAKLWGEEYNRHKPPKQVDIMQMCIIELKDR KGASNYVAKRYIEPVDRDV.YFED.VRLQMEAKLWGEEYNRHKPPKQVDIMQMCIIELKDR KGASNYVAKRYIEPVDRDV.YFED.VRLQMEAKLWGEEYNRHKPPKQVDIMQMCIIELKDR	PGKPLFHLEHYIEGKYIKYNSNSGFVRDDNIRLTPQAFSHFTFERSGHQLIVVDIQGVGDLYTDPQIHT SGKPLFHLEHYIEGKYIKYNSNSGFVRDDNIRLTPQAFSHFTFERSGHQLI <mark>I</mark> VDIQGVGDLYTDPQIHT PGK <mark>T</mark> LFHLEHYIEGKYIKYNSNSGFVRDDN <mark>V</mark> RLTPQAFSHFTFERSGHQLIVVDIQGVGDLYTDPQIHT PGKPLFHLEHYIEGKYIKYNSNSGFVRDDNIRLTPQAFSHFTFERSGHQLI <mark>I</mark> VDIQGVGDLYTDPQIHT PGKPLFHLEHYIEGKYIKYNSNSGFVRDDN <mark>M</mark> RLTPQAFSHFTFERSGHQLIVVDIQGVGDLYTDPQIHT PGKPLFHLEHYIEGKYIKYNSNSGFVRDDNIRLTPQAFSHFTFERSGHQLIVVDIQGVGDLYTDPQIHT PGKPLFHLEHYIEGKYIKYNSNSGFVRDDNIRLTPQAFSHFTFERSGHQLIVVDIQGVGDLYTDPQIHT *!**!*!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	TESGTDFGDGNLGVRGMALFFHSHACNKICKSMGLTPFDHSPREKSVLDNCTKMLQTAQT SESGTDFGDGNLGVRGMALFFHSHSCNKICQSMGLTPFDLSAKEKDALYRSNKLLESART SEKGTDFGDGNLGVRGMALFFHSHACNRICKSMGLTPFDLSPREKDAVNQNTKLLQSAKT SESGTDFGDGNLGVRGMALFFHSHSCNKICKSMGLAPFDLSSKEKDALDHSNKLLESAQT SEKGTDFGDGNLGVRGMALFFYSHACNRICKSMGLAAFDLSPRERDTVNQNTKLLQSAKT SETGTDFGDGNLGVRGMALFFYSHACNRICESMGLAPFDLSPRERDAVNQNTKLLQSAKT SETGTDFGNGNAMPTANTATATATATATATATATATATATATATATATATATA
VLRGCEEPCGSPRVRTMSGSRSHPMLSRLS VLRGFEEQCGSPRVRTTSLGHMPVLLSRLS VLRGSEEQCGFTRFRTISGGRVPPLLSHLS VLRGSEEQCGSARVRTISVGRAPPLLSRLS VLRGTEEVCGSTRVRTISGSR.PPILSRLS IVRGTEEKCGSSRVRTISGSR.PPLLFRLS VVRGIEEKCGSNRVRTMSGSR.PPLLSRL VVRGIEEKCGSNRVRTMSGSR.PPLLSRL VVRGIEEKCGSNRVRTMSGSR.PPLLSRL	ETSSVDESPSDPDSVPCSPLTMACSPLAAHGFMGRSPLG ETSSVDE.SSDTDSIPCSPLSMGVSVGRSPMG ETSSGDDSMSDIS.DSIPCSPLAFPGSPLGQHFSMGSMGRSPLG ETSTGDNTISDSITCSPLAFPGSPLGQHFSMGSMGKSPLG ETS.ADDNMSDSTFDSLPCSPSSWW.SPKEDLLGKSPMG ENS.GDESMSDVAFDSLPSSPSSATPHKMDMLH ENS.GDD.ISDMAFDSLPSSPSPV.TPHGHRFDSHG ENS.DDMSDMAFDSLPNSPSPV.TPHGHRFDSHG	GFSF.TGMGEHERANNNNHGEYKESDSGGDSGFPSERRSEGDPNDGWSFMNEMNETHRSQNTEQQDSENGGDSGYPSERRSEGDPVEGWSFMNEMNETHRSQNTEQQDSENGGDSGYPSERRSEGDPTDGWSFINEMDEREKHNRSHSPEHKDSENGGDSGCPSERRSEGDPTDGWSFVNEMDEWEK.HNSHSPEHKDSENGEDSGCPSERRSELEG.EWTVFNEVDNLSDEHSDSLAERRVSENGGDSGCPSERRSELEG.EWPVFNEVDNLVHKDHDRLDNQRDSENGGDSGCPSEKRSEDLEDMDGWPIFNEVDNLHNEENNNLDNHRDSENGGDSGCPSEKRSESDELEGWPIFNEVDNLHNEENNNLDNHRDSENGGDSGCPSEKRSESDELEGWPIFNEVDNLHNEENNNLDNHRDSENGGDSGCPSEKRSESDELEGWPIFNEVDNLVHKDHEGLDNQRDSENGGDSGYPSEKRSEDLEDLD	HVDGRKMV.APSRA.AAE.FNSY	DSEWLTDEKWSFYHSSRAHVHRSSSVATEVERLNAL.VQKKIGQSILGKVHLAMVRRLTEEKWSFYHSSRSHIHRPSCVAVEVERLNALLLEKKIGKSILGKVHLAMV .SQPLTDDKWSVYHSSRSHVHRPSCVAVEMERLDSLILERKIGKSILGKVHLAMV .SVLLTDEKWSVYHSSRSHVHRPSCVAVEMERLDSMILERKIGKSILGKVHMAMVDHHSEDKWNHYHTSRAHMHRPSCVAVEVERLNAIKQEKKIGKSILGKVHLAMV .SARVSVEKWNLYNSSRVHVHRPSCVAVEVQRLNALELEKKIGKSILGKVHLAMV .GKVSVEKWNQFHASRVNVHRPSCVAFEVQRLNALELEKKIGKSILGKVHLAMV .GKVTVEKWNQFHASRVHVHRPSCVAVEMQRLNTLELEKKIGKSILGKVHLAMV	/RYHEGGRFCEKDEQWDQESAMLHLERAALCGELEAIVAMGQCCLHLPHHILPEMELEDNAGN /RYHEAGRFCEKDEPWDQISAMYHLETAAMCGELEAIVALGQCYLQLPHHILPEIELEPSEEN /HYHEAGRFCDKEEQWDQDSAMYHLERAAMCGELEAIVALGQCYLQLPHHILSEMELEDNSGS /NYHEGGRFCEKEEQWDQDSAMYHLETAAMCGELEAIVALGQCYLQLPHHILSEMELEDNSGN /RYHEAGRFCDKLEEWDRNSAVFHLEHAALCGELEAIVALGLIYLQLPHHILTDVTVEDTQQN /RYHEAGRFCAKDQEWDQESALFHLVHAADCGELEAIVGLGLIYSQLPHHILSEVTSEDTEES /RYHEGGRFCEKDKEWDQESAIFHLEHAAHCGELEAIIGLGLMYLQSPHHILTDVTVQDTGDN /RYHEGGRFCEKNQEWDQESAIFHLEHAAHCGELEAIIGLGLMYSQSPHHILTDVSVQDTEDN /RYHEGGRFCEKDQEWDQESAIFHLEHAAHCGELEAIIGLGLMYSQSPHHILTDVSVQDTEDN	KMKGFKYLLLAAEAGDRSSMIIVARAFDTGINLSADRKQDWGEAIHWYESVLNMTDYDEGGEFDGTQDE SQKGFRFLLQAAEAGDRPSMILVARAFDTGLKLPSDRAMDWTEAVHWYDSALKMTDYDEGGEFDGMQDE RMKGFKFLLQAAEAGHRSCMILVARAFDTGINLSPDRSQDWKEAMRWYNCALNMTDYDEGGEFDGMQDE RMKGFKFLLQAAEAGDRPCMILVARAFDTGINLSPERSQDWKEAVSWYDCALNMTDYDEGGEFDGMQDK RQSGFDYLLMGAEAGDRPSMILAARAFDTGINLSPNRTQDWKEALHWYTAALNMTDYDEGGEYDGTGDE RVKGFDYLLRAAEAGDRPSMILVARAYDTGVNLGSNRIQDWKEALHWYNAALNMTDYDEGGEYDGTQDE RIKGFNYLLMAAEAGDRPSMIHVARAFDTGVNLGSDRIQDWQEALFWYDSALNMTDYDEGGEYDGTQDE RIKGFNYLLMAAEAGDRPSMIHVARAFDTGVNLGSDRIQDWQEAIFWYDSALNMTDYDEGGEYDGTQDE RIKGFNYLFMAAEAGDRPSMIHVARAFDTGVNLGSDRIQDWQEAIFWYDSALNMTDYDEGGEYDGTQDE RTKGFDYLLRAAEAGDRPSMILVARAYDTGVNLAPDRQQDWKRALHWYDAALNMTDYDEGGEYDGTQDE	EPRYLLLARVAEMYQVGGYNLTADPQRAGDLFTQAAEAAMEAMKGRLANQY739 EPRYLLLARLAEMYQEGGNNLDADPQRAGDLFTEAADAAMEAMKGRLANQY731 EPCYRLLAREAEMYQEGGHSLDPDPQRAGDLFTEAADAAMEAMKGRLANQY771 EPYLLLAREAEMYQEGGHGLDRDPQRAGDLFTQAADAAMEAMKGRLANQY733 EPKYCLLARKAEIHMTGGFGVEPDPQKAGDLFTEAADAAMADMKGRLANQY718 EPRYLLLAREAEMLMTGGFHLAKDPQRSVVGDWAQKKWEPLAERVCQERVGRFSQDSLLA719 EPKYLLLAREAEMLLTGGFNLQKDPQRSGDLYTEAAEAAMEAMKGRLANQY724 EPKYLLLAREAEMLLTGGFNLQKDPQRSGDLYTEAAEAAMEAMKGRLANQY704 EPRYLLLAREAEMLLTGGFNLQKDPQRSGDLFTEAAEVAMEAMKGRLANQY704

rm X	YDKAEEAWALMEE	752
	YMKAEEAWAMMEE	744
ofor	YMKAEEAWGMMEEEE	786
	YMKAEEAWGMMEE	746
orm	YQRAEEAWAMMEE	731
4	RILIWFLEPATFFLPTSSPKPLRSWLTFNL	749
ke i	YQKAEEAWACMEE	737
	YQKAEEAWACME.EE	718
acto	YQKAEEAWAMMEE	730
m X1	YQKAEEAWAQMEE	745
X1	YQKAEEAWAMMEE	742
	YQKAEEAWAQMEE	725
	YQKAEEAWAQMEE	725
el1	YQKAEEAWAQMEE	725
	******!* ** *	

GSARDGSRNRCVKNRVCFQNSNA.

 \overline{X} non-conserved $\geq 50\%$ conserved