

**Additional file 7. Alignment of NCX proteins**

The file presents the alignment of all NCX proteins that were utilized as markers or identified in this work (excluding CrNCX). See the legends of Additional file 5 for details of sequence alignment and color annotation.

	1	10
H.sapiens_NCX1.1	.....	MYNMRRLSLSPTFSMGFHL
P.troglodytes_NCX1.1	.....	MYNMRRLSLSPTFSMGFHL
C.familiaris_NCX1.1	.....	MLQLRLLPPTFSMGCHL
F.catus_NCX1.1	.....	MLRLRLSPTFSVGFHL
C.porcellus_NCX1.1	.....	MLRLSLSPTYSLGFHL
B.taurus_NCX1.1	.....	MLQFSLSPTLSMGFHV
R.norvegicus_NCX1.1	.....	MLRLSLPPNVSMGFRL
M.musculus_NCX1.1	.....	MLRLSLPPNVSMGFRL
M.mulatta_NCX1.3	.....	MRRLSLSPTFSMGFHL
O.cuniculus_NCX1.2	.....	MPRFSLSPFFSMGFHL
S.tropicalis_NCX1	.....	MMKLGTSLAFFARFHF
O.mossambicus_NCX1.1	.....	MSPVRTVPMFFTYKLIFFATVIS
O.mykiss_NCX1	.....	MRRTGTSSFLFCALQTLVLLAVFS
D.rerio_NCX1a	.....	MGQSGTSSYFSLALNLSIFLLVFS
H.sapiens_NCX3.3	.....	MAWLRLQPLTSAFLHFGL
R.norvegicus_NCX3.3	.....	MAWLRLQPLTSAFLHFGL
M.musculus_NCX3.1	.....	MAWLRLQPLTSAFLHFGL
G.gallus_NCX3	.....	MAWLSLQPLTSAFLHFGL
D.rerio_NCX4a	.....	MFHLRLSRFSFSSITPCL
T.nigroviridis_NCX4a	.....	.....MPHTLI
H.sapiens_NCX2.1	.....	MAPLALVGVTLTL
R.norvegicus_NCX2.1	.....	MAPLALVGVALLL
M.musculus_NCX2.1	.....	MAPLALMGLVLLL
S.kowalevskii_3	.....	MMKLLCSILSRTLSELTTRGVGASALLLVAVFL
T.adhaerens_2	.....	MQLFSALLWVIAVVVLFKVDPTLGSSIIISERD
L.opalescens_NCX	MNPFKISFSWGVPLFLLGLFFDFAHASEDSNDTCTTEAET.....	.....
A.mellifera_NCX	.....	.....
D.melanogaster_NCX	.....	MQLLLKSIFTCALFVIFVYATAQSLKQVQETEARQAYLNVTSSSSSNLSQDDGHFLSRRLRQVS
H.magnipapillata	.....	.....MQFVLT
C.elegans_NCX1	.....	.....MTKLLKIYLFVLSLT
C.briggsae_NCX1	.....	.....MRVSLKTTITNAMTKLKIILFLVSVFG
C.elegans_NCX2	.....	.....
C.briggsae_NCX2	.....	.....
T.spiralis	.....	.....
M.brevicollis_1	.....	.....MRPQTWPAWAVLAMLV
Salpingoeca	.....	.....MVRGLSL
S.kowalevskii_1	.....	.....
S.kowalevskii_2	.....	.....
T.adhaerens_1	.....	.....
D.pulex_1	.....	.....
P.humanus_corporis	.....	.....
O.dioica	.....	.....
A.pisum	.....	.....
P.marinus	.....	.....MIGLSLWG
A.anophagefferens_1	.....	.....
E.huxleyi	.....	.....
C.intestinalis	.....	.....
B.floridae	.....	.....
T.adhaerens_3	.....	.....
N.vectensis_2	.....	.....
consensus>50	.....	.....

	20	30	40	50	60	70	80
H.sapiens_NCX1.1	LVTVSL	LFSHVD	HVIAET	EMEGEG	NETGEC	TGSYY	CKKGVILPIWE
P.troglodytes_NCX1.1	LVIVTLL	FSHVDH	VIAETEM	EGEGNET	GECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
C.familiaris_NCX1.1	LAVVALL	FSHVDL	ISAETEM	EGEGNET	GECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
F.catus_NCX1.1	LAFVPL	LFSHVD	LISADTE	MEGEGNE	TGECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
C.porcullus_NCX1.1	LAMMTLL	ISHVDH	ITAETEM	VEGEGNE	TGECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
B.taurus_NCX1.1	IAMVALL	FSHVDH	ISAETEM	EGEGNET	GECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
R.norvegicus_NCX1.1	VTLVALL	FTHVDH	ITADTEA	ETGGNET	TTECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
M.musculus_NCX1.1	VALVALL	FSHVDH	ITADTEA	ETGGNET	TTECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
M.mulatta_NCX1.3	LIVALL	FSHVDY	VIAETEM	EGEGNET	GECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
O.cuniculus_NCX1.2	LAIVALL	FFRVDH	VSAETEM	EGEGNET	GECTGS	YCKKGVILPIWE	PQ.DPSFGDKI
S.stropicalis_NCX1	LVLALL	LLCNGV	SIRSETT	TVADFEN	HTDSTCS	YCKKGVILPIWE	PQ.NPSFGDKI
M.mossambicus_NCX1.1	TEFFYS	AAGSTL	TLT...TS	NQTATN	HSKCGS	TDCKIEGVILPLWK	PE.NPAFTDRL
O.mykiss_NCX1	SEIKFVT	AGNSNP	SLGTNSS	IGNQTN	KKCDSV	DECKVGVILPIWL	PE.NTSFGDKL
D.rerio_NCX1a	YELTPVI	AGSSKSS	LDVDTSN	ANSNQET	CGGSY	ECKEGLVILPIW	TPV.NPSFGDKL
H.sapiens_NCX3.3	VTFVLL	FLNGLR	AEAGSG	DVPSTG	QNNESC	SGSSDCKEGLVILPIW	YPE.NPSLGDKI
R.norvegicus_NCX3.3	VTFVLL	FLNGLR	AEAGDL	RDPVSA	GQNNESC	SGSSDCKEGLVILPIW	YPE.NPSLGDKI
M.musculus_NCX3.1	VTFVLL	FLNGLR	AEAGSD	VPSAGQ	NNESC	SGSSDCKEGLVILPIW	YPE.NPSLGDKI
G.gallus_NCX3	VTFVLL	FLHGLQ	VDAGLT	GDSTSS	VQNS	SCSGSFDCKEGLVILPIW	YPE.NPSLGDKI
D.rerio_NCX4a	SSVLLL	LIFLSG	LHLSQAS	GDASHS	GPNGCS	GEDSCSEGVVLP	INPQ.NPSVGDKV
T.nigroviridis_NCX4a	SIVLLL	FPVTRF	SHSGV	SHEDAGR	TTGNCS	EDNCPSEGVVLP	LNWNPQ.NPAVGDKV
H.sapiens_NCX2.1	AAPPCSG	AATPTPS	LPPPPAN	DSDTST	GGCQGS	YRCQPGLVLP	WVEPD.DPSLGDKA
R.norvegicus_NCX2.1	GAPHC	LGEATPT	PSLPPPP	ANDSDA	SPGGCQ	GSYRCQPGLVLP	WVEPD.DPSLGDKA
M.musculus_NCX2.1	GVPHCL	GEATPT	PSLPPPP	ANDSDA	SPGGCQ	GSYRCQPGLVLP	WVEPD.DPSLGDKA
H.sapiens_NCX2.1	NPHPTL	TQETFR	NSTYPP	VWDGEE	EEVCSR	NATACKPGLVLP	KWTPD.PVNVGDV
T.adhaerens_2	VSTINST	STPTLS	DAEKRL	IACNTT	TRCKNG	LFLPHWPY	PKDSKGNIL
L.opalescens_NCX	.....	.....	.....	.....	.....	.....	.....
A.mellifera_NCX	.....	.....	.....	.....	.....	.....	.....
D.melanogaster_NCX	HGEEG	DEGAPS	QMDDE	LEQMTK	VHGEA	PAEDV	RECEGLVLP
H.magnipapillata	FVFIW	FVNAV	FANETI	IIFTN	ITVKNT	CRTLEN	LKCKPGLVLP
C.elegans_NCX1	TLGQY	AAEPON	GEI	IHVSS	QRIPGE	PEPACAPAK	PCSPGVI
C.briggsae_NCX1	QFQ..	AQQQ	NGTE	VVRV	FSQRL	PSPED	TACPAK
C.elegans_NCX2	.MTRLG	CWLAV	AFLVAL	AGLAD	AGSNCS	AAADAT	TRNCIDGLV
C.briggsae_NCX2	.MTRLG	CWLAV	AFLVAL	AGLAD	AGSNCS	AAADAT	TRNCIDGLV
T.spiralis	.....	.....	.....	.....	.....	.....	.....
M.brevicollis_1	AACVVP	GLAQAP	GPEPR	PSDPP	CSDTV	LSQGT	PICKGGS
Salpingoeca	ALVATT	VIVLS	LSLVAG	VHGEPC	GDRI	VNNTK	PICKGGS
S.kowalevskii_1	.....	.....	.....	.....	.....	.....	.....
S.kowalevskii_2	.....	.....	.....	.....	.....	.....	.....
T.adhaerens_1	.....	.....	.....	.....	.....	.....	.....
D.pulex_1	.....	.....	.....	.....	.....	.....	.....
P.humanus_corporis	.....	.....	.....	.....	.....	.....	.....
O.dioica	.....	.....	.....	.....	.....	.....	.....
A.pisum	.....	.....	.....	.....	.....	.....	.....
P.marinus	VDSPRS	LATPVI	EQPI	ICEHGG	SLVLE	DRLMG	YVEGSH
A.anophagefferens_1	.....	.....	.....	.....	.....	.....	.....
E.huxleyi	.....	.....	.....	.....	.....	.....	.....
C.intestinalis	.....	.....	.....	.....	.....	.....	.....
B.floridae	.....	.....	.....	.....	.....	.....	.....
T.adhaerens_3	.....	.....	.....	.....	.....	.....	.....
N.vectensis_2	.....	.....	.....	.....	.....	.....	.....
consensus>50	.....	.....	.....	.....	.....	.....	.....

.....c..gvilpiw.pq.d.s.gd..ara.vyfvval.ym

	90	100	110	120	130	140	
H.sapiens_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
P.troglodytes_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
C.familiaris_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
F.catus_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
C.porcellus_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
B.taurus_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
R.norvegicus_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
M.musculus_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
M.mulatta_NCX1.3	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
O.cuniculus_NCX1.2	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
S.tropicalis_NCX1	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTKTT	.....	VRIWNETVSNLTLMA	
O.mossambicus_NCX1.1	FLGVSIIADRFMS	SIEVITS	QEREITIK	KPNGETKITT	.....	VRIWNETVSNLTLMA	
O.mykiss_NCX1	FLGVSIIADRFMS	SIEVITS	QEREITIK	KPNGETKITT	.....	VRIWNETVSNLTLMA	
D.rerio_NCX1a	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTTTT	.....	VRIWNETVSNLTLMA	
H.sapiens_NCX3.3	FLGVSIIADRFMS	SIEVITS	QEREVTIK	KPNGETSTTT	.....	IRVWNETVSNLTLMA	
R.norvegicus_NCX3.3	FLGVSIIADRFMS	SIEVITS	QEREVTIK	KPNGETSTTT	.....	IRVWNETVSNLTLMA	
M.musculus_NCX3.1	FLGVSIIADRFMS	SIEVITS	QEREVTIK	KPNGETSTTT	.....	IRVWNETVSNLTLMA	
G.gallus_NCX3	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTTTT	.....	IRVWNETVSNLTLMA	
D.rerio_NCX4a	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTTTT	.....	VRIWNETVSNLTLMA	
T.nigroviridis_NCX4a	FLGVSIIADRFMS	SIEVITS	QEKEITIK	KPNGETTTTT	.....	VRIWNETVSNLTLMA	
H.sapiens_NCX2.1	FLGVSIIADRFMS	AAIEVITS	KEKEITIT	KANGETS	TSVGT	VRIWNETVSNLTLMA	
R.norvegicus_NCX2.1	FLGVSIIADRFMS	AAIEVITS	KEKEITIT	KANGETS	TSVGT	VRIWNETVSNLTLMA	
M.musculus_NCX2.1	FLGVSIIADRFMS	AAIEVITS	KEKEITIT	KANGETS	TSVGT	VRIWNETVSNLTLMA	
S.kowalevskii_3	FLGVSIVADRFMS	AAIEVITS	KEKEVTVK	RPNGETKVVVS	.....	VRIWNETVSNLTLMA	
T.adhaerens_2	FLGVSIIIDRFMS	AAIEVITS	KERFIKVK	MSNGEYKRIS	.....	VRVWNETVSNLTLMA	
L.opalescens_NCX	FLGVSIIIDRFMS	AAIEVITS	KEKLVVVK	KPDGTTVVN	.....	VRIWNETVSNLTLMA	
A.mellifera_NCX	FLGVSIIIDRFMS	AAIEVITS	KEKLVVVK	RQKGPQIVV	.....	VRVWNETVSNLTLMA	
D.melanogaster_NCX	FVGVSIIADRFMS	AAIEVITS	IERAVVVK	GPNTKQVMH	.....	VRIWNETVANLTLMA	
H.magnipapillata	FLGVSIIIDRFMS	SIEVITS	KEKEVLVD	RVTGKHSVT	.....	VKIWNETVANLTLMA	
C.elegans_NCX1	FFGVSIVADRFMS	SIEVITS	QKSKVKMK	KITGEHFTIM	.....	VRVWNETVSNLTLMA	
C.briggsae_NCX1	FFGVSIVADRFMS	SIEVITS	QKSKVKMK	KITGEPFTVL	.....	VRVWNETVSNLTLMA	
C.elegans_NCX2	FLGISIVADRFMS	SIEVITS	MERTIVVK	RPGLDPMVQ	.....	VRIWNETVSNLTLMA	
C.briggsae_NCX2	FLGISIVADRFMS	SIEVITS	MERTIVVK	RPGLDPMVQ	.....	VRIWNETVSNLTLMA	
T.spiralis	FVGVAIADRFMS	CAIEVITS	TKRTLKLT	TAIDETGSVLEQYQ	.....	EVLWNETVANLTLMA	
M.brevicollis_1	FAGVGIIIDRFMS	AAIEVITS	RERHVMV	DGI	.....	ETVLIWNETVANLTLMA	
Salpingoeca	FSGIGIIIDRFMS	AAIEVITS	KEKEVKLKD	GR	.....	VVHVQVWNETVANLTLMA	
S.kowalevskii_1	FMGVSIIADRFMS	SIEVITS	KTKTVNIA	NPKAPGGTEE	.....	IKVRVWNETVANLTLMA	
S.kowalevskii_2	LYGVSIIIDRFMS	SIEVITS	KTKTVNIA	NPKAPGGTQK	.....	LKVRVWNETVANLTLMA	
T.adhaerens_1	FLGVAIIADRFMS	CAIEVITS	QTRRIKISD	KDGNMKE	.....	VEVRIWNETVANLTLMA	
D.pulex_1	FTGVAAIADRFMS	GAIEVITS	TTRKVFINH	RSRSEPEV	.....	IEVRIWNETVANLTLMA	
P.humanus_corporis	FVGVSIVADRFMS	SIEVITS	QTKKVVYLG	KFKKKPESESALNVTATSTHQLDFIE	.....	VRVWNETVANLTLMA	
O.dioica	FLGVAIVADRFMS	SIEVITS	RETHITILV	DGOPEKQ	.....	KVRFWNETVANLTLMA	
A.pisum	LLGISIVADRFMS	TAIDKITS	SHTKKVYLA	KEKPN	GSDVSLRPD	.....	QPEVIEVRIWNETVANLTLMA
P.marinus	FVGVAIIIDRFMS	GAIEVITS	KKKRARLTI	QGETK	.....	LVTVRVWNETVANLTLMA	
A.anophagefferens_1	FLGVSIIADRFMS	AAIEVITS	KEKVPVGTD	.....	.....	VWNETVANLTLMA	
E.huxleyi	FLGVAIAADRFMS	LGIEVITS	QEQAQTVV	DGRKR	.....	VYSLKIWNETVANLTLMA	
C.intestinalis	FLGVAIGSDRFMS	SIEVITS	KKRRTIILW	DEELGENTKK	.....	EVLWNETVANLTLMA	
B.floridae	FIGITIGSDRFMS	SIEVITS	KKRKVVRWD	DEERQETVER	.....	EVLWNETVANLTLMA	
T.adhaerens_3	FVGVAIVADRFMS	GAIEVITS	KKKTVITYD	RETGEQATK	.....	EVLWNETVANLTLMA	
N.vectensis_2	FLGVAIVADRFMS	CAIEVITS	KKRKYTRYD	HEKGE	SVEI	.....	EVLWNETVANLTLMA
consensus>50	flGvs!iadrFM	s!evITS	qekeitik	kpnge	.....	vriwNet!sNlTLma	

	150	160	170	180	190	200
H.sapiens_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
P.troglodytes_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
C.familiaris_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
F.catus_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
C.porcullus_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
B.taurus_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
R.norvegicus_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
M.musculus_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
M.mulatta_NCX1.3	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
O.uniculus_NCX1.2	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
S.tropicalis_NCX1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	IRKIKHLRVFFV	
O.mossambicus_NCX1.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
O.mykiss_NCX1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	HRKVKHLRVFFV	
D.rerio_NCX1a	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	HRKVKHLRVFFV	
H.sapiens_NCX3.3	LGSSAPEIILLSLIEVC	.....GHGFI	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
R.norvegicus_NCX3.3	LGSSAPEIILLSLIEVC	.....GHGFI	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
M.musculus_NCX3.1	LGSSAPEIILLSLIEVC	.....GHGFI	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
G.gallus_NCX3	LGSSAPEIILLSLIEVC	.....GHGFI	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RKIKHLRVFFV	
D.rerio_NCX4a	LGSSAPEIILLSVIEVC	.....GHKFE	AGHLGPSTIVGSAAFNMFIIAL	CVYVVPDGET	VRKIKHLRVFFV	
T.nigroviridis_NCX4a	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
H.sapiens_NCX2.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
R.norvegicus_NCX2.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
M.musculus_NCX2.1	LGSSAPEIILLSVIEVC	.....GHNFT	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
S.kowalevskii_3	LGSSAPEIILLSLIEVC	.....GNGFH	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
T.adhaerens_2	LGSSAPEIILLSLIEVC	.....GNGFH	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
L.opalescens_NCX	LGSSAPEIILLSVIEVC	.....GQKFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RTIKHLRVFFV	
A.mellifera_NCX	LGSSAPEIILLSVIEVC	.....AKNFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
D.melanogaster_NCX	LGSSAPEIILLSVIEVC	.....AKNFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
H.magnipapillata	LGSSAPEIILLSVIEVC	.....GQKFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
C.elegans_NCX1	LGSSAPEIILLSVIEVC	.....GNNFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRVQHNGVFFV	
C.briggsae_NCX1	LGSSAPEIILLSVIEVC	.....GNNFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRVQHNGVFFV	
C.elegans_NCX2	LGSSAPEIILLSVIEVC	.....GNNFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRVQHNGVFFV	
C.briggsae_NCX2	LGSSAPEIILLSVIEVC	.....GNNFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRVQHNGVFFV	
T.spiralis	LGSSAPEIILLSVIEVC	.....ARGFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	IRRQKHLRVFFV	
M.brevicollis_1	LGSSAPEIILLSVIEVC	.....GNGFH	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRKIKHLRVFFV	
Salpingoeca	LGSSAPEIILLSVIEVC	.....AGEFF	AGALGPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRLESMGVFFV	
S.kowalevskii_1	LGSSAPEIILLSVIEVC	.....AGNFF	AGALGPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRLESMGVFFV	
S.kowalevskii_2	LGSSAPEIILLSVIEVC	.....GNGFH	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
T.adhaerens_1	LGSSAPEIILLSVIEVC	.....GNGFH	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
D.pulex_1	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
P.humanus_corporis	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
O.dioica	MGSSMPEIILLNIEIV	.....FNNFE	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
A.pisum	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
P.marinus	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
A.anophagefferens_1	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
E.huxleyi	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
C.intestinalis	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
B.floridiae	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
T.adhaerens_3	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
N.vectensis_2	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	
consensus>50	LGSSAPEIILLSVIEVC	.....GNNFK	AGDGLPSTIVGSAAFNMFIIAL	CVYVVPDGET	RRYIKLVKVFAL	

	210	220	230	240	250	260	270
H.sapiens_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
P.troglodytes_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
C.familiaris_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
F.catus_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
C.porcullus_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
B.taurus_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
R.norvegicus_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
M.musculus_NCX1.1	TA	AW	SIFAY	TW	LYIIL	SV	IS
M.mulatta_NCX1.3	TA	AW	SIFAY	TW	LYIIL	SV	IS
M.uniculus_NCX1.2	TA	AW	SIFAY	TW	LYIIL	SV	IS
S.stropicalis_NCX1	TA	AW	SIFAY	TW	LYMIL	SV	IS
O.mossambicus_NCX1.1	TA	AW	SIFAY	TW	LYLIL	AV	IS
O.mykiss_NCX1	TAT	W	SIFAY	TW	LYLIL	AV	IS
D.rerio_NCX1a	TAT	W	SIFAY	TW	LYLIL	AV	IS
H.sapiens_NCX3.3	TA	AW	SIFAY	TW	LYMIL	AV	IS
R.norvegicus_NCX3.3	TA	AW	SIFAY	TW	LYMIL	AV	IS
R.musculus_NCX3.1	TA	AW	SIFAY	TW	LYMIL	AV	IS
G.gallus_NCX3	TA	AW	SIFAY	TW	LYMIL	AV	IS
D.rerio_NCX4a	TA	AW	SIFAY	TW	LYLIL	SV	IS
T.nigroviridis_NCX4a	TA	AW	SIFAY	TW	LYLIL	SV	IS
H.sapiens_NCX2.1	TAS	W	SIFAY	TW	LYLIL	AV	IS
R.norvegicus_NCX2.1	TAS	W	SIFAY	TW	LYLIL	AV	IS
M.musculus_NCX2.1	TAS	W	SIFAY	TW	LYLIL	AV	IS
S.kowalevskii_3	TAT	C	S	L	F	A	Y
T.adhaerens_2	TAS	C	S	V	F	A	Y
L.opalescens_NCX	TAT	W	S	V	F	A	Y
A.mellifera_NCX	TAT	W	S	I	F	A	Y
D.melanogaster_NCX	TAL	F	S	V	F	A	Y
H.magnipapillata	TAS	C	S	M	F	A	Y
C.elegans_NCX1	T	V	W	S	T	F	A
C.briggsae_NCX1	T	V	W	S	T	F	A
C.elegans_NCX2	TAT	W	S	V	F	A	Y
C.briggsae_NCX2	TAT	W	S	V	F	A	Y
T.spiralis	T	T	G	S	V	F	A
M.brevicollis_1	TAL	F	S	I	F	A	Y
S.salpingoeca	TAL	F	S	V	F	A	Y
S.kowalevskii_1	T	S	F	F	C	I	F
S.kowalevskii_2	TAA	F	S	I	I	A	Y
T.adhaerens_1	TAT	F	S	I	F	A	Y
D.pulex_1	TAV	F	S	I	L	A	Y
P.humanus_corporis	CS	I	F	S	I	L	A
O.dioica	TAF	F	S	I	F	A	Y
A.pisum	IG	A	F	S	F	F	A
P.marinus	TAG	C	S	I	F	A	Y
A.anophagefferens_1	TAF	F	S	V	F	A	Y
E.huxleyi	TAA	A	S	V	F	A	Y
C.intestinalis	T	S	L	W	S	M	S
B.floridae	T	S	L	W	S	M	S
T.adhaerens_3	TAI	W	S	V	F	A	Y
N.vectensis_2	TAV	W	S	M	F	A	Y
consensus>50	ta	.w	sifAY	vW	yl	l.v.	s

ta.w.sifAY.vW.yl.l.v.spgvvevW.EgllTf.ffpi.v..awvadrll.yky..k.yr.....g.ii

H.sapiens\_NCX1.1 EHEGDRPS.S.  
P.troglodytes\_NCX1.1 EHEGDRPS.S.  
C.familiaris\_NCX1.1 EHEGDRPS.S.  
F.catus\_NCX1.1 EHEGDRPS.S.  
C.porcellus\_NCX1.1 EHEGDRPS.S.  
B.taurus\_NCX1.1 EHEGDRPS.S.  
R.norvegicus\_NCX1.1 EHEGDRPA.S.  
M.musculus\_NCX1.1 EHEGDRPA.S.  
M.mulatta\_NCX1.3 EHEGDRPS.S.  
O.cuniculus\_NCX1.2 EHEGDRPS.S.  
S.tropicalis\_NCX1 ETEGDRPS.S.  
O.mossambicus\_NCX1.1 ETEGEPELPS.  
O.mykiss\_NCX1 ETEGEAQIPS.  
D.rerio\_NCX1a ETEGEPELQS.  
H.sapiens\_NCX3.3 ETEGDHPKG.  
R.norvegicus\_NCX3.3 ETEGEHPKG.  
M.musculus\_NCX3.1 ETEGDHPKG.  
G.gallus\_NCX3 ESEGDHPKG.  
D.rerio\_NCX4a ETEGDMFT.  
T.nigroviridis\_NCX4a ESEGDAMFT.  
H.sapiens\_NCX2.1 GAEGDPPKSI.  
R.norvegicus\_NCX2.1 GAEGDPPKSI.  
M.musculus\_NCX2.1 GAEGDPPKSI.  
S.kowalevskii\_3 GNHYP.  
T.adhaerens\_2 VEPDSI.  
L.opalescens\_NCX CEGQDAEAGE.  
A.mellifera\_NCX AEAGDSGGV.  
D.melanogaster\_NCX GEHDQVEMDA.  
H.magnipapillata IQTGDDVVA.  
C.elegans\_NCX1 R.  
C.briggsae\_NCX1 R.  
C.elegans\_NCX2 T.  
C.briggsae\_NCX2 T.  
T.spiralis LRELNRRSWT.  
M.brevicollis\_1 IRT.  
Salpingoeca NDV.  
S.kowalevskii\_1 DRY.  
S.kowalevskii\_2 .  
T.adhaerens\_1 DTE.  
D.pulex\_1 SIO.  
P.humanus\_corporis MEE.  
O.dioica NPD.  
A.pisum .  
P.marinus MFS.  
A.anophagefferens\_1 YFD.  
E.huxleyi AFS.  
C.intestinalis DPAMVNGLSRRGSAGVKSPEKSRKMNWTNEGVCVSVSNGDICGGTPNMGSPALKRHRVSI AAPTNPAA  
B.floridae NVRVIGSPQGRASVLNTR.  
T.adhaerens\_3 VGCKSRHPSASIIIRSTSRELSNVHRESVASAHNSTYDLESVTKLNPGENRSRANSARTSIS . . . . . A  
N.vectensis\_2 FTKGLVDRNSLALLRFVRFVKQARNCDVVSKTSRFSHLQVRVLGFTDAPSSHAMIHRSMEL . . . . .  
consensus>50 e.egd . . . . .

	290	300	310	320	330	
H.sapiens_NCX1.1	KTEIEMDGKVVNSHVENFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
P.troglodytes_NCX1.1	KTEIEMDGKVVNSHVENFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
C.familiaris_NCX1.1	KTEIEMDGKVVNSHVDNFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
F.catus_NCX1.1	KTEIEMDGKVVNSHVDNFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
C.porcellus_NCX1.1	KTEIEMDGKVVNSHVDNFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
B.taurus_NCX1.1	KTEIEMDGKVVNSHVDNFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
R.norvegicus_NCX1.1	KTEIEMDGKVVNSHVDNFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
M.musculus_NCX1.1	KTEIEMDGKVVNSHVDNFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
M.mulatta_NCX1.3	KTEIEMDGKVVNSHVENFLD	GALVLEVD	ERDQD	DEEARREMAR	ILL	
O.cuniculus_NCX1.2	KTEIEMDGKVVNSHVDNFLD	GALVLDVD	ERDQD	DEEARREMAR	ILL	
S.tropicalis_NCX1	KADIEMDGKVLNSHTFLD	GSLVLEVD	EKQDQ	DEEARREMAK	ILL	
O.mossambicus_NCX1.1	KVDIEMDGKMLNSHGETF	TEELE.G.	KELD	DEEARREVAR	ILL	
O.mykiss_NCX1	KMDIEMDGKMLNS.S	SFMDGAM.GFDE	EKDL	DEEARREMR	ILL	
D.rerio_NCX1a	KADIEMDGGMLNSHAE	EFLDGAV.DNE	EKDDAD	DEEARREMAK	ILL	
H.sapiens_NCX3.3	IEMDGKMMNSHFLD	GNLVPLEGEVD		ESRRREMIR	ILL	
R.norvegicus_NCX3.3	IEMDGKMMNSHFLD	GNLVPLEGEVD		ESRRREMIR	ILL	
M.musculus_NCX3.1	IEMDGKMMNSHFLD	GNFTPLEGEVD		ESRRREMIR	ILL	
G.gallus_NCX3	IEMDGKMMNSHFLD	GNLVTVEGEVD		ESRRREMIR	ILL	
D.rerio_NCX4a	KMDIEMDGGQANSHT	.KEALDGMLAGV	E	EGGGGEE	DEEARREMAR	TLL
T.nigroviridis_NCX4a	KMDIEMDGGQVNSHT	PKAALDGMLEG	E	EGGGMISEQDQE	DEEARREMAR	TLL
H.sapiens_NCX2.1	ELDGTFFVGAEPGLGLG	GLGPAEAREL	DA		SRREVIQ	ILL
R.norvegicus_NCX2.1	ELDGTFFVGAEPGLGLG	ALGTGPAEAREL	DA		SRREVIQ	ILL
M.musculus_NCX2.1	ELDGTFFVGAEPGLGLG	ALGTGPAEAREL	DA		SRREVIQ	ILL
S.kowalevskii_3		LSHEYDDVEYRGRF	E	DDDELDFEDIKDL	DESREQE	AIRILL
T.adhaerens_2	IMRSPKKEERDSEGF	NSVYKNNPMDV	VS	SIDDVDSEKND	EMRRKKAMQ	IV
L.opalescens_NCX	GKSEDG	.ALKEGGDDVEVREF			EQRKKEYIE	ILL
A.mellifera_NCX	ELEIKPQ	QDSFHNMDADTPEAKEF			EQTRRDYINT	L
D.melanogaster_NCX	EKGPKQ	PMVTSARGNDAEA	.F		DEARREYITL	L
H.magnipapillata	VSLKSTIKHDSSNDNV	DEKDIELLPLEE	DD	PLEIINDKK	.KKAMEAF	
C.elegans_NCX1	RSPSKKTRENVENGA	.GLPGDAT	NL	IGGDADALAF	EIHRRHLYD	IF
C.briggsae_NCX1	RSPSKKTHENALE	ESGNGGIPGDQN	Q	SLIGGDADALAF	EIHRRHLYD	IF
C.elegans_NCX2	EAEEMKMLENGT	QG		DPALKAF	EHRQEFIE	LM
C.briggsae_NCX2	EAEEMKMLENGS	PQ		GADPALKAF	EHRQEFIE	LM
T.spiralis	GPALNGK	EKLLDVVEQNRVD			RLS	
M.brevicollis_1		EDGRNIAFDPYDM			AV	
Salpingoeca		EHGQFHDPEAD			TI	
S.kowalevskii_1		LTAENVTKEGVADVM			KEIGKHPD	ITPEQ
S.kowalevskii_2		LGIGNVTREGVADVM			KEMGKHPD	ITQEQ
T.adhaerens_1		NGHLAFDDSTGRLLVPD	S	FDKSSANSFLKAVKTR	TDITAE	
D.pulex_1		PGELEAMVDGLTLTKD	Q	VDPNELAKWVR	QASRMGLT	GED
P.humanus_corporis		SKKIFVERKFKDKGI	.DKETLYSFFKEL	KKYPGIS	NED	
O.dioica		TPEGIELLQKQRPNSMAL	VDEFMKDFEGD	PLTIDEQ	AAAI	
A.pisum			EHNTHQLDLDL	QNKENLIKFKVN	VKKYSGIT	DD
P.marinus		IKTNV	ASAHRDHIVGLE	DLSPDELVD		LM
A.anophagefferens_1		TAKI	SPVSSAHVIQVGS	TPFRPYEFS		DL
E.huxleyi		CPDK	ARPATHVVVAFT	RDGKPIRHSFAR	E	AATQWARGDL
C.intestinalis	AIELASISKDNGR	KESERRQVEPE	PAYRAFARFRHAAI	WSIGRKRKPINLN	LQPS	PKLPVNDPKLL
B.floridae	PTELLALEGRNRN	LNDMDRPSQGG	OPTNALSRARFRHAAI	VRSMLYK		KAPKPKARFA
T.adhaerens_3		RSSFVYEDHGKIQVD	IKPNSFARFRHAAI	IRSLMG	GKRHRRS	KSVTDK
N.vectensis_2		RALEQHR	GSVRNSFDRFRHAAI	RSVTR	SKKLIKINEGEDV	E
consensus>50			e.d		n	e

	340	350	360	370	380	390
H.sapiens_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
P.troglodytes_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
C.familiaris_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
F.catus_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
C.porcullus_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
B.taurus_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
R.norvegicus_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
M.musculus_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
M.mulatta_NCX1.3	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
O.uniculcus_NCX1.2	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
S.tropicalis_NCX1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRIQATRLMTGAGNILK	RHAAD	QA.....	RKAVSMH
O.mossambicus_NCX1.1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRCQATRIMTGAGNVLK	KHACH	QA.....	KRAT..H
O.mykiss_NCX1	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRCQATRIMTGAGNVLK	KHACH	QA.....	RKAVGAY
D.rerio_NCX1a	KELKQKHPDKEI	EQLIELANYQVLS	QQKSRAFYRCQATRIMTGAGNVLK	KHACH	QA.....	RKALGIH
H.sapiens_NCX3.3	KDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRMMTGAGNILK	KHAAE	QA.....	KKASSMS
R.norvegicus_NCX3.3	KDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRMMTGAGNILK	KHAAE	QA.....	KKTASMS
M.musculus_NCX3.1	KDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRMMTGAGNILK	KHAAE	QA.....	KKTSSMS
G.gallus_NCX3	KDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRMMTGAGNILK	KHAAE	QA.....	KKSTSLH
D.rerio_NCX4a	KELKQRHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRMMTGAGNILK	KHAAE	QA.....	RKVVSCH
T.nigroviridis_NCX4a	KELKQRHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRMMTGAGNILK	KHAAE	QA.....	RRAAPAE
H.sapiens_NCX2.1	KDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRLMTGAGNVLR	RHAAD	AA.....	RRPGAND
R.norvegicus_NCX2.1	KDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRLMTGAGNVLR	RHAAD	AA.....	RRPGATD
M.musculus_NCX2.1	KDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRLMTGAGNVLR	RHAAD	AA.....	RRPGATD
H.sapiens_NCX3.1	RDLKQKHPDKEI	DQLEMANYYALSH	QQKSRAFYRIQATRLMTGAGNVLR	RHAAD	AA.....	RRPGATD
T.adhaerens_2	KEIKQNHNPATA	KEIEELASYEAL	KYQKSRAYRIQATRKLITGSGNVIK	QRKM	..S.....	LPANPDG
L.opalescens_NCX	REMRKKNPTLDM	KTLEMAESEAVNR	GPKSRAFYRIQATRKLITGSGNLIK	KAKAQ	AGVAQPIVD	QKPED
A.mellifera_NCX	RELRRKYPALPL	EQLVMAHEEVLG	GPKSRAFYRVQATRKMVGAGNLSK	KISER	AQSDLSVKA	EQLKQ
D.melanogaster_NCX	TELRQKYPADL	EQLVMAHEEVLG	GPKSRAFYRIQATRKMVGAGNLSK	KISER	AQSDLSVKA	EQLKQ
H.magnipapillata	HRARTKYPADL	EQLVMAHEEVLG	GPKSRAFYRVQATRKMVGAGNLSK	KISER	AQSDLSVKA	EQLKQ
C.elegans_NCX1	KQLRSEHPDAPV	DELEKHAKEKVV	GEQKSRAFYRIQATRKMVGAGNLSK	KISER	AQSDLSVKA	EQLKQ
C.briggsae_NCX1	KQLRSEHPDAPV	DELEKHAKEKVV	GEQKSRAFYRIQATRKMVGAGNLSK	KISER	AQSDLSVKA	EQLKQ
C.elegans_NCX2	REIRKQNPHTPT	ELQKQAEYEMIS	SRGPKSRAFYRVQATRRLIGGGDVK	KRIDK	EH.....	NKALDA.
T.spiralis	REIRKQNPHTPT	ELQKQAEYEMIS	SRGPKSRAFYRVQATRRLIGGGDVK	KRIDK	EH.....	NKALDA.
M.brevicollis_1	VLKDVETEALTE	DEIANIAAARKI	DGTGKVSRAQFRIDANRRLRGAAPL	PDWQR	ALLD.....	TQKSRAI
I.kriarsnsmtm	EDKVNLAALAKL	KGERSRAQFRIDATR	KLVSGLLPDYNKAKLQ	.....	.....	EALLR..
S.kowalevskii_1	AATIAAIEAEKNS	PH.....	.....	TKAWYRVNATR	NMTGGQKLI	PAVDPKLLSAYDQAKMGS
S.kowalevskii_2	AATIAAIEAEKNS	PH.....	.....	TRAWYRVSE	TRNMTGGQKLI	PVDPKLLLAYDQVKMGSS
T.adhaerens_1	AAKLAASKIIDS	EPO.....	.....	SYIYRVGAARL	VSGSKRVTP	LLDARLQKIFDDIEMKKNKF
D.pulex_1	AAKLAASKIIDS	EPO.....	.....	SRAWYRIGATR	IFSGSKRIQP	QLSKLREYVDAINEHPDAV
P.humanus_corporis	AAKLAASKIIDS	EPO.....	.....	SAATYRMSAIR	DLTGGRKLRP	RLSLKLOEVYDTINQYPLGS
O.dioica	AVASKMQGSFC	VVPSFHVTKNLC	QPTQGRSRAWYRVQATRLLTAGARTE	PN.....	.....	KALSRMA
A.pisum	AAKLAASKIIDS	STH.....	.....	RGAMWYRIGAVRR	FTGGQIEP	VLEDHLRQ.....
P.marinus	AEVTRRRRLQ	ERCPSQIRQRHGS	SLTD	DAVMRIIQAERPPRT	TRAQHRIQAS	RMLTTRRSRGASKRSSVWNS
A.anophagefferens_1	LKQLDPTLEES	ERHDLVKKLAM	GQAKPS.....	.....	RAVLRMNAVR	ATGQKVIKADGPPDPKV
E.huxleyi	ARELQRMDDP	AADGTSDAQGLAS	YLASSLGLT	LRRAAYRVAT	TRGATGVAAP	QARAAAEQEVAPPPSAV
C.intestinalis	SVVTKIASIRK	LYSNNNAIQDES	.....	SGN.VAFASSAYS	TLESAGELT	IDVLLFHRKRKPKG.....
B.floridae	EVTVMVSIKAL	TSPAMRRQLAAN	DMSSGK.F	FTGHTYSV	LESSGAL	IEVDVLFHRRRLSKL.....
T.adhaerens_3	SEPKMAHFVNI	IITHRLNEQSNAS	SRNIAATFV	FEIAAYS	VREDSGS	IDLIVLLNRHRALIKKSQENKNNK
N.vectensis_2	.....	.....	.....	DDNLNRFV	FGTSSYSV	LKSAKHIDLEIILQN.....
consensus>50	kelkqkhp.e.eql.elanyq.1..q.ksrafyriqatrlmtgagnilk...	ad.....	.....	.....	.....	.....

	400	410	420	430	440	450
H.sapiens_NCX1.1	E V N T E V T E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
P.troglodytes_NCX1.1	E V N T E V T E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
C.familiaris_NCX1.1	E V N T E V A E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
F.catus_NCX1.1	E V N T E V A E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
C.porcellus_NCX1.1	E V N T E V A E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
B.taurus_NCX1.1	E V N T E V A E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
R.norvegicus_NCX1.1	E V N M D V V E N D P V S K . . . . .	V F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
M.musculus_NCX1.1	E V N M E M A E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I M R R G G D L . . S T T V F V D F R T E D G T				
M.mulatta_NCX1.3	E V N T E V T E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
O.cuniculus_NCX1.2	E V N T E M A E N D P V S K . . . . .	I F F E Q G T Y Q C L E N C G T V A L T I I R R G G D L . . T N T V F V D F R T E D G T				
S.tropicalis_NCX1	E V N T D V V E N D P V S K . . . . .	I Y F E Q A T Y Q C L E N C G T V A L T L V R R G G D L . . T N T V V V D F R T E D G S				
O.mossambicus_NCX1.1	D I F S E V S V N D F S S K . . . . .	V F F D P G T Y Q C L E N C G S V A L N V V R R G G D L . . T S T V V V D Y R T E D G T				
O.mykiss_NCX1	E I R S E V S E N D F S S K . . . . .	V F F D P G T Y Q C L E N C G T V A L N V V R L G G D L . . T N T V S V E Y R T E D G T				
D.rerio_NCX1a	E L R S E V S D N D I S S K . . . . .	I F F D P G T Y Q C L E N C G T V A L N V V R R G G D L . . T S T V S V E Y R T E D G T				
H.sapiens_NCX3.3	E V H T D E P E . D F I S K . . . . .	V F F D P C S Y Q C L E N C G A V L L T V V R K G G D M . . S K T M Y V D Y K T E D G S				
R.norvegicus_NCX3.3	E V H T D E P E . D F A S K . . . . .	V F F D P C S Y Q C L E N C G A V L L T V V R K G G D I . . S K T M Y V D Y K T E D G S				
M.musculus_NCX3.1	E V H T D E P E . D F A S K . . . . .	V F F D P C S Y Q C L E N C G A V L L T V V R K G G D I . . S K T M Y V D Y K T E D G S				
G.gallus_NCX3	E V R P D E P E . E F I S K . . . . .	I Y F D P C S Y Q C L E N C G A V L L T V V R K G G D V . . S K T I Y V D Y K T E D G S				
D.rerio_NCX4a	E A N P Q E . E D P H T I Y . . . . .	L E F E P S H Y Q C F E N C G S L K L S V T R H G G D S . . G C T V K V D Y R T E D G T				
T.nigroviridis_NCX4a	E A S G Q E . E D P H T I Y . . . . .	L Q F E P S H Y Q C F E N C G S L K L S V S R Y G G S . . G C T V K V D Y R T E D A T				
H.sapiens_NCX2.1	G A G E D . . . . . E D D G A S R . . . . .	I F F E P S L Y H C L E N C G S V L L S V T C Q G G E G . . N S T F Y V D Y R T E D G S				
R.norvegicus_NCX2.1	G A P D D . . . . . E D D G A S R . . . . .	I F F E P S L Y H C L E N C G S V L L S V A C Q G G E G . . N S T F Y V D Y R T E D G S				
M.musculus_NCX2.1	G A P D D . . . . . E D D G A S R . . . . .	I F F E P S L Y H C L E N C G S V L L S V A C Q G G E G . . N S T F Y V D Y R T E D G S				
S.kowalevskii_3	E V K I E V P Q D Q N F T R . . . . .	V F F E P A E Y T V F E N V G T F N A T V V R R G G D M . . N S T I Y V D Y R S E D G T				
T.adhaerens_2	N V D P E D I E K C S L T Q . . . . .	I Y F S P E K Y T V L E N C G T V G V T V E R T G N . L . . N N V L T V D Y K T Q D G T				
L.opalescens_NCX	E I T . . . . . R . . . . .	V S F D P G H Y T V M E N V G T F Y G T V T R E G G D L . . T K T L Y V D Y K T E D G T				
A.mellifera_NCX	E A E S I E I E N V N A M R . . . . .	I F F E P G H Y T V M E N V G S F E V G V T R A G G D L . . S K P C T V D Y C T E D G S				
D.melanogaster_NCX	D D E . . . . . E A D D P I R . . . . .	M Y F E P G H Y T V M E N C G E F E V R V V R R G . D I . . S T Y A S V E Y E T Q D G T				
H.magnipapillata	E V S A S Q K D T V L E N C . . . . .	V Q F E P D Q Y T V V E S C G Q C F L T V K R F G N D L . . S D T L Y V D Y E T S D G T				
C.elegans_NCX1	Q K T M A T V E F D . . . . .	. . . . . P P H Y T C L E N V G D V Y L T V K C D R G S V P E D T T V T V H Y R T I A D T				
C.briggsae_NCX1	K Q T M A T V E F D . . . . .	. . . . . P P H Y T C L E N V G D V Y L T V K C D R G N V P E D T T V T V H Y R T I A D T				
C.elegans_NCX2	. . . . . A Q E K Q S R D N T C K . . . . .	. . . . . I F L D P A H Y T V L E S V G S F D V V V G R D G G . . P D G L T V M V D Y F T E D G S				
C.briggsae_NCX2	V Q A Q E K Q L R D N T C K . . . . .	. . . . . I F L D P A H Y T V L E S V G S F D V V V G R D G G . . P D G L T V M V D Y F T E D G T				
T.spiralis	M L R R T Q T E T G V R S V . . . . .	T N V E F A A N A Y A V D P T G E R R V R L K V V R R G S A R K Q L V F N Y R T M S G S				
M.brevicollis_1	K D S Y Y A H R A T A L R Q E Q T F G F M T I E Y H V R E D A G A . . . . .	. . . . . V T L T I V R T G D L S Q S A S I G I E T Q E G T				
Salpingoeca	. . . . . D D F F E A H K T K L A K K N F V G L E S L Q Y S I G E G D G H . . . . .	. . . . . V N V K I L R T G D L S L P L T I E Y Y T E G D T				
S.kowalevskii_1	V G S T L I S P E . . . . . I P I V E F A A S S C A V Y E N E K R . . . . .	. . . . . V R V Y V N R R G N I Q P Q V I F K F E T L D G T				
S.kowalevskii_2	I G S T L F . P E . . . . . I P I V E F A A A S C A V Y E H E K R . . . . .	. . . . . V R V W I N R K G N I H P Q I V I F K F E T L D G T				
T.adhaerens_1	S S T A D V R D D P E T T T R T T I E F T T A C A V M E N E K M . . . . .	. . . . . V K V G I S R T G K L N N T I K V R Y E T L P G T				
D.pulex_1	N L S P L I E T V P Q N K A I . . . . . I E F H A I A C A V P E S V G R . . . . .	. . . . . F P I T I V R S G K T D N S V S V R V E T I D G S				
P.humanus_corporis	A L S L L P E I S M K N A I V . . . . . E F H S A T C A V R E N I G S . . . . .	. . . . . F F I T V C R H G N L E P S V K V R V E S V D G S				
O.dioica	R S F S N L P N K N T S D Y A M F N F A C T S S V M E N A K Q . . . . .	. . . . . I E L K V M R T G N I M P A T C S Y E T I D G T				
A.pisum	. . . . . P P T L S Q N D E T K Y A I I E F H A P T I A V N E N I G R . . . . .	. . . . . F P V I I W R H G N L N T K A T V R V D S I N G T				
P.marinus	L P A H L V A L K D T V E A D E A V R S E S T I P V I N F K C S R F A V M E G A G R I V L P L V T S R P L E R D V V R Y E T L Q G T A T					
A.anophagefferens_1	L K A Y L E G A A G P K P H R P E D V V A F F S D V N G K I N T K Y A L L E S D K A V T L H V M R S P A E G P M T I K W A T R D G T A K G S E					
E.huxleyi	L S F A V S G A A F S E G A K E . . . . .	. . . . . A S L V V E R S G E E L A R E L D W E G S V E Y E S R D G T				
C.intestinalis	. . . . . Q T V I P T T N A N G K F D T Q I M P G V I . . . . .	. . . . . S V D Y E T R E G T				
B.floridae	. . . . . T L L N S M S K L N L V N K S N N G P N N G P V V N G T T T D S G Q S S A P S K Q D E A K E D V S V E F F E T R D G T					
T.adhaerens_3	T V T F G L G K S T S E T I I K S L S S S F K T D K S I K S C D P I T E E S I Q D L E S S R Y S D E E G D D A T Q N N F S V D F E T R D G G					
N.vectensis_2	. . . . . N N N N K N K E M I Y A H N D S I A D T I S E N S F E D G V T P S S P G S S Q R F S V D Y E T H D G S					
consensus>50	e . . . . . e n d . . . . .	i f f e . . . . . y . c l e n c g . . . . . l . v v r . g g d . . . . . t v . v d y . t e d g t				

	460	470	480	490	500	510
H.sapiens_NCX1.1	ANAGSDYEF	TEGTV	VFKPGDTQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSSEASED
P.troglodytes_NCX1.1	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSSEASED
C.familiaris_NCX1.1	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSSEASED
F.catus_NCX1.1	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSSEASED
C.porcullus_NCX1.1	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSSEASED
B.taurus_NCX1.1	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSLEASED
R.norvegicus_NCX1.1	ANAGSDYEF	TEGTV	IFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRSSEVSED
M.musculus_NCX1.1	ANASDYEFT	TEGTV	IFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRSDDVSED
M.mulatta_NCX1.3	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSSEASED
O.cuniculus_NCX1.2	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVSSEASED
S.stropicalis_NCX1	ANAGSDYEF	TEGTV	IFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRVNAENTAN
O.mossambicus_NCX1.1	ANASDYEFT	TEGTV	VFKPGETEKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRVRAEGNSHE
O.mykiss_NCX1	ANAGSDYQF	TEGTV	VFNPGETEKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVISEGTGYVQ
D.rerio_NCX1a	ANAGSDYQF	TEGTV	IFKPGETEKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVKVISEGANNGNP
H.sapiens_NCX3.3	ANAGADYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
R.norvegicus_NCX3.3	ANAGADYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
M.musculus_NCX3.1	ANAGADYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
G.gallus_NCX3	ANAGADYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
D.rerio_NCX4a	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
T.nigroviridis_NCX4a	ASAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
H.sapiens_NCX2.1	AKAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
R.norvegicus_NCX2.1	AKAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
M.musculus_NCX2.1	AKAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
H.sapiens_NCX2.1	AKAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
S.kowalevskii_3	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
T.adhaerens_2	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
L.opalescens_NCX	ANAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
A.mellifera_NCX	AEAGSDYEF	TEGTV	VFKPGETQKEI	RVGI	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
D.melanogaster_NCX	ASAGTDFVGR	KGLLS	FPPGVDEQRF	RIE	VIDDDVFEEDEN	CFYIRLFPNSEG
H.magnipapillata	ANEGDDYLPV	KGTLE	VFKPNETTKI	IT	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
C.elegans_NCX1	AQAESDFVHT	TEGTV	IFEPGQTEQK	IKV	IVDNDIYEDDE	QFMVRLSQVRAFRSEH
C.briggsae_NCX1	AQENSDFMPE	TEGTV	IFEPGQTEQK	IKV	IVDNDIYEDDE	QFMVRLSQVRAFRSEH
C.elegans_NCX2	ANAGSDYIPV	KGTLE	VFKPNETTKI	IT	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
C.briggsae_NCX2	ANAGSDYIPV	KGTLE	VFKPNETTKI	IT	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
T.spiralis	AVQDVHFLK	SETV	VFAQEREKTI	RIE	VCNPAQWRPGIT	FVWKLELIPGDKDRIT
M.brevicollis_1	AKAGSDYVAL	DRRVE	FAGQAEARV	IE	IVDDDEPEDDE	FFLARKLQPOP
Salpingoeca	ATMGVDFEET	KGVAE	FSAGEEEKV	IP	IKIIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
S.kowalevskii_1	AEAGSDYIAQ	RDIM	VFGSNETQKF	ID	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
S.kowalevskii_2	AEAGSDYIAQ	RDIM	VFGSNETQKF	ID	IIDDDIFEEDEN	NFLVHLSNVRIIEEQPEEGM
T.adhaerens_1	AEPEKDYIPQ	NDVL	VFEPENEKI	KYVT	IP	IVDDNEWEPDEN
D.pulex_1	AVGGQDFVTF	NQVI	QFEAGELEK	IVT	ME	IIDDDIFEEDEN
P.humanus_corporis	AKAGDDYVKV	DEIL	VFEPEETEKL	LVK	IVDD	TQWEPNEE
O.dioica	ATKGEDYVEA	KGVLE	FRKETEQKS	IT	VE	IIDDDIFEEDEN
A.pisum	AKEGEDFVKV	KEIVE	FKENEKEKI	YI	IE	ILDDNKWEPDE
P.marinus	AGEDYVPVID	GKIT	IRAGESSDEV	TA	IMDDDI	VEEDEN
A.anophagefferens_1	VGGTGDYETC	SGELT	FADKENFKT	IV	KV	FDNEDTEDDE
E.huxleyi	AHAGQDYTA	VSGRL	CFARGQSAVLA	V	PL	LDDEVAAEEDT
C.intestinalis	AKINKDFKYT	SGTL	IFPETDYVQS	IS	PI	INDQYYPDT
B.floridiae	GKTKDYYHT	QGRLL	VFKETEYRKK	IK	IP	INDQYQSKDFYV
T.adhaerens_3	AKQGVNFKYS	AGRLN	FTKSEYQKT	IT	V	DLNDGQYHPNLS
N.vectensis_2	AKNGKEYQT	VKGT	MAFRAGINKHIL	RL	PL	LPCEDFSKNKD
consensus>50	anagsdyef	.egt.vf	kpgdtqkei	.v.iidddifeede	.fyv.lsnv	.v

	520	530	540	550	560
H.sapiens_NCX1.1	NHVS...TLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
P.troglodytes_NCX1.1	NHVS...TLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
C.familiaris_NCX1.1	NHVS...ALAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
F.catus_NCX1.1	NHVS...TLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
C.porcellus_NCX1.1	NHIS...TLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
B.taurus_NCX1.1	SHVS...TLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
R.norvegicus_NCX1.1	NHVS...AIA	LGSFNT	ATITIF	DDDHAGIF	TFEEPVTHV
M.musculus_NCX1.1	NHAS...SIA	LGSFST	ATITIF	DDDHAGIF	TFEEPVTHV
M.mulatta_NCX1.3	NHVS...TLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
O.cuniculus_NCX1.2	NHIS...TLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
S.tropicalis_NCX1	NHVT...PLAC	LGSFST	ATVTIF	DDDHAGIF	TFEEPVTHV
O.mossambicus_NCX1.1	NHVD...TLA	LGLPCT	ATVTIF	DDDHAGIF	TFEEPVMTV
O.mykiss_NCX1	NHLD...TLA	LGLPCS	ATVTIF	DDDHAGIF	TFEEPVMTI
D.rerio_NCX1a	NHVD...ALA	LGLPST	ATVTIF	DDDHAGIF	TFEEPIVHI
H.sapiens_NCX3.3	IFNSLPLPRA	VLASPC	CVATVTIL	DDDHAGIF	TFECDTIHV
R.norvegicus_NCX3.3	ILNSLPLPRA	VLASPC	CVATVTIL	DDDHAGIF	TFECDTIHV
M.musculus_NCX3.1	ILNSLPLPRA	VLASPC	CVATVTIL	DDDHAGIF	TFECDTIHV
G.gallus_NCX3	ELGNSPYPKA	ILASPC	CVATVTIL	DDDHAGIF	TFECDVIHV
D.rerio_NCX4a	IGSSHVPPKA	ALGNAHS	ATVTIY	DDDHAGIF	TFESNSTRV
T.nigroviridis_NCX4a	.....PPEA	ALGKAHT	ATVTIY	DDDHAGIF	TFESDSTKV
H.sapiens_NCX2.1	.....PKGR	LVAPLL	ATVTIL	DDDHAGIF	SFQDRLLHV
R.norvegicus_NCX2.1	.....PKGR	LVAPLL	ATVTIL	DDDHAGIF	SFQDRLLHV
M.musculus_NCX2.1	.....PKGR	LVAPLL	ATVTIL	DDDHAGIF	SFQDRLLHV
S.kowalevskii_3	.....PQAR	LVEPAF	ATVTIY	DDDHAGIF	TFEEKLVKV
T.adhaerens_2	.....KCVI	ESFST	ATVTIL	DDDHAGIF	TFESKYSV
L.opalescens_NCX	.....AKAQ	LANPFL	ATVTIM	DDDHAGIF	TFIDEKEMSV
A.mellifera_NCX	.....AMLV	SPSL	ATVTIM	DDDHAGIF	TFEPERDMEL
D.melanogaster_NCX	.....VKLAV	PMIAT	ATVTIM	DDDHAGIF	TFEFTDSVFEI
H.magnipapillata	.....TKTI	TIGKAN	ATITII	DDDHAGIF	TFEHSNFEV
C.elegans_NCX1	.....LAA	.....TAT	VIIV	DDDHAGIF	TFGLSEKFKC
C.briggsae_NCX1	.....PAA	.....TAT	VIIV	DDDHAGIF	TFGLSEKFKC
C.elegans_NCX2	.....GLPVA	QLEM	NTATIM	DDDHAGIF	TFGFHDHFQV
C.briggsae_NCX2	.....GLPVA	QLEM	NTATIM	DDDHAGIF	TFGFHDHFQV
T.spiralis	AAVGESVEFA	.....IS	DLRVGENE	GFARIPISR	.....RASLST
M.brevicollis_1	.....NYRL	IPAREL	AKIIV	DDDHAGIF	TFEFQTRMEVE
Salpingoeca	.....QYLL	IVPGRNR	ARITII	DDDHAGIF	TFVLSLKFSC
S.kowalevskii_1	.....LGK	KNTMQIT	IINDE	EPGTFE	FTMPSYLVK
S.kowalevskii_2	.....LGK	KHI MQIT	IINDE	EPGTFE	FTMPSYLVK
T.adhaerens_1	.....DAI	IGEKNSTE	ITII	DDDHAGIF	TFEFNKASYL
D.pulex_1	.....KDV	M LGRIS	IMEVTI	DDDHAGIF	TFEFEEGILVK
P.humanus_corporis	.....VQI	GRISIME	ITII	DDDHAGIF	TFEFKGTGILVK
O.dioica	.....PRCK	LGRSIN	QVTII	DDDHAGIF	TFEFKPAFMCK
A.pisum	.....LSVK	LGCISIM	EVTTI	DDDHAGIF	TFEFKGRGLLVK
P.marinus	.....GKL	SVAEVTI	DDDHAGIF	TFEDELV	VEGDVSPSPWPVDPSEARLWQEAQVTVLRT
A.anophagefferens_1	.....AF	.....GDA	STCEVTI	DDDHAGIF	TFEFPKKEGAE
E.huxleyi	.....GRR	STMAVTI	DDDHAGIF	TFEFAVAETRV	.....ESQRVAVLEVERK
C.intestinalis	.....DAT	LGDPSV	SRVTII	DDDHAGIF	TFELETSQLYADME
B.floridae	.....DAAL	GDPSV	ARVTII	DDDHAGIF	TFEFPPIYGD
T.adhaerens_3	.....YSK	LADPSV	ALVTI	DDDHAGIF	TFEFKAKYHV
N.vectensis_2	.....ID	LGEPNL	TRITII	DDDHAGIF	TFEFASYHANFV
consensus>50	.....a.lg.p	..atvt!	..#ddhagif	..fee	.....v.....esig.mev.vlr

	570	580	590	600	610	620						
H.sapiens_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
P.troglodytes_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
C.familiaris_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
F.catus_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
C.porcullus_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
B.taurus_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
R.norvegicus_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
M.musculus_NCX1.1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
M.mulatta_NCX1.3	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
O.cuniculus_NCX1.2	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
S.tropicalis_NCX1	SGARGN	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
O.mossambicus_NCX1.1	SGARGV	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
O.mykiss_NCX1	SGARGL	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
D.rerio_NCX1a	SGARGV	VIVPYK	TIEGTARGG	GE	DFEDTC	GELEFQND	IVKTI	ISVK	VIDDEEYK	KTFF	LE	
H.sapiens_NCX3.3	SGARGT	VIVPFR	TVEGTAKGG	GE	DFEDTY	GELEFKNDE	TVKTI	IRVK	VIDDEEYK	QENFF	IA	
R.norvegicus_NCX3.3	SGARGT	VIVPFR	TVEGTAKGG	GE	DFEDTY	GELEFKNDE	TVKTI	IRVK	VIDDEEYK	QENFF	IA	
M.musculus_NCX3.1	SGARGT	VIVPFR	TVEGTAKGG	GE	DFEDTY	GELEFKNDE	TVKTI	IRVK	VIDDEEYK	QENFF	IA	
G.gallus_NCX3	SGARGT	VIVPFR	TVEGTAKGG	GE	DFEDTY	GELEFKNDE	TVKTI	IRVK	VIDDEEYK	QENFF	IA	
D.rerio_NCX4a	SGARGK	VAVPYH	TVEGTAKAG	GE	DFEDVA	GKLEFLNDE	TMKIL	LEVK	VIDDEEYK	KTFF	TIH	
T.nigroviridis_NCX4a	SGARGK	VAVPYH	TVEGTAKAG	GE	DFEDVA	GKLEFLNDE	TMKIL	LEVK	VIDDEEYK	KTFF	TIH	
H.sapiens_NCX2.1	SGARGT	VRLPYR	TVDGTARGG	GE	DFEDAC	GELEFGDDE	TMKTL	LQVK	VIDDEEYK	KNFF	IE	
R.norvegicus_NCX2.1	SGARGT	VRLPYR	TVDGTARGG	GE	DFEDAC	GELEFGDDE	TMKTL	LQVK	VIDDEEYK	KNFF	IE	
M.musculus_NCX2.1	SGARGT	VRLPYR	TVDGTARGG	GE	DFEDAC	GELEFGDDE	TMKTL	LQVK	VIDDEEYK	KNFF	IE	
S.kowalevskii_3	SGARGT	VIVPYH	TIEGTAKGH	GE	DFEDAD	GELEFHND	TSKFI	INVK	VIDDEEYK	KNFF	VE	
T.adhaerens_2	SGARGT	IRVPYH	TKEGTAKGG	GE	DFEDAV	GELEFKNDE	TSKTI	IEVH	VIDDEEYK	NEIF	VVL	
L.opalescens_NCX	SGARGC	VKVPFH	SVDTATYGG	GE	DFEDLV	KDVI	FDNDE	TEKFL	RVR	VVDDEEYK	NETFF	IW
A.mellifera_NCX	SGARGR	VVVPYR	TIEGTAKPG	GE	DFEDTY	GELEFKNDE	TVKTI	IRVK	VIDDEEYK	QENFF	IA	
D.melanogaster_NCX	SGARGT	VIVPYW	TENDTATES	GE	DFEDTY	GELEFKNDE	TVKTI	IRVK	VIDDEEYK	QENFF	IA	
H.magnipapillata	IGARGK	VSIPIYQ	TVEGSALGG	GE	DFEDSK	GELEFFDDE	TIKTV	DIPI	VNREEYK	TKFT	TVI	
C.elegans_NCX1	RGARGK	VSIPIYQ	TVEGSALGG	GE	DFEDSK	GELEFFDDE	TIKTV	DIPI	VNREEYK	TKFT	TVI	
C.briggsae_NCX1	RGARGK	VSIPIYQ	TVEGSALGG	GE	DFEDSK	GELEFFDDE	TIKTV	DIPI	VNREEYK	TKFT	TVI	
C.elegans_NCX2	SGARGK	VIIIPFR	TVEGTASAD	GE	DFEMKE	GEIVFEDNQ	TEALV	EIG	VDTEQYERS	DYFY	IE	
C.briggsae_NCX2	SGARGK	VIIIPFR	TVEGTASAD	GE	DFEMKE	GEIVFEDNQ	TEALV	EIG	VDTEQYERS	DYFY	IE	
T.spiralis	TTMFS	SASVEWK	TENGTAQGG	GE	DFVGEK	GELILEPGV	VEAYI	DIPI	VNDYEPKDE	FTVK		
M.brevicollis_1	NGTKG	AVACRY	FMRNGSALD	GE	DFVGEK	GELILEPGV	VEAYI	DIPI	VNDYEPKDE	FTVK		
Salpingoeca	NGSKG	ELKVN	YATQDGTAAHAP	GE	DFEETK	GTLVFEDGE	TEKVI	IAIN	VIDDEEYK	DEHF	FL	
S.kowalevskii_1	NGTDG	KVVLKWK	TTDMTASISG	GE	DFEGGE	GELVFEHGE	KQKSI	IDIP	IVDDQYEEK	DES	FKL	
S.kowalevskii_2	NGTDG	KVVLKWK	TTDMTASISG	GE	DFEGGE	GELVFEHGE	KQKSI	IDIP	IVDDQYEEK	DES	FKL	
T.adhaerens_1	NGSDG	TISVNWK	TIDGSAING	GE	DFRGGT	GKIEFQHG	EMSKL	IEIP	LDDDI	FEN	DETF	HI
D.pulex_1	YGADG	EVSVRWR	TIDKNVSG	GE	DFYIGE	GCLVFKHSE	MKRV	IEIP	ISNDMMPEK	DECF	EV	
P.humanus_corporis	YGADG	EVSVRWR	TIDKNVSG	GE	DFYIGE	GCLVFKHSE	MKRV	IEIP	ISNDMMPEK	DECF	EV	
O.dioica	NGADG	QVSVWR	VTPITAOHG	GE	DFYIGE	GCLVFKHSE	MKRV	IEIP	ISNDMMPEK	DECF	EV	
A.pisum	HGSDG	EVSVRWR	TIDGSAING	GE	DFYIGE	GCLVFKHSE	MKRV	IEIP	ISNDMMPEK	DECF	EV	
P.marinus	KGCSG	EVRVLYR	TESGNVAVP	GE	DFYIHT	G...ELIM	HNQAAG	VIKI	PLRSTSTR	TPH	FRL	
A.anophagefferens_1	NGSAG	QVQCDY	ELVDGTACCG	GE	DFGGTV	FPEREGT	FVFENT	EVKFI	EIPVIN	TNRY	EGES	
E.huxleyi	RGVQG	AVSVGWR	TADGTALAS	GE	DFVPPGR	GRLTFAPGV	TRAAIE	VEI	IDDGAY	LAD	ESFAV	
C.intestinalis	CGSDG	VVVFVHY	ATIDGTAAHGG	GE	DFVPPGR	GRLTFAPGV	TRAAIE	VEI	IDDGAY	LAD	ESFAV	
B.floridiae	NGTDG	NTSVEYT	TMDGTAKGG	GE	DFSSPT	LDYISNS	GVLYFAHGE	TSKQI	SIN	LNK	EKMGRH	FVILLR
T.adhaerens_3	KGVDG	TVHLEFA	TIDGTAAHGG	GE	DFSSPT	LDYISNS	GVLYFAHGE	TSKQI	SIN	LNK	EKMGRH	FVILLR
N.vectensis_2	KGCDG	TTLKYH	TMDGTAKGG	GE	DFSSPT	LDYISNS	GVLYFAHGE	TSKQI	SIN	LNK	EKMGRH	FVILLR
consensus>50	sgarg.vivpy.tiegtA.gg	.....g.d	%ed..gelefqnde..k.i.i.i	iddeeyekn..ff..								



	660	670	680	690	700	710	720	
H.sapiens_NCX1.1	GQPVFRKVVHAREHPILSTVITIADEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
P.troglodytes_NCX1.1	GQPVFRKVVHAREHPILSTVITIADEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
C.familiaris_NCX1.1	GQPVFRKVVHAREHPIPSTVITIAEEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
F.catus_NCX1.1	GQPVFRKVVHAREHPIPSTVITIAEEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
C.porcullus_NCX1.1	GQPVLRKVVHARDHPIIPSTVITIADEYDDKQPLTSKEE	ERR	IAELGR	FI	LGEHTKL	EVII	ESYEFKSTV	
B.taurus_NCX1.1	GQPVFRKVVHAREHPLPSTIITIADEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
R.norvegicus_NCX1.1	GQPVFRKVVHARDHPIIPSTVISISEEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
M.musculus_NCX1.1	GQPIFRKVVHARDHPIIPSTVITISEEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	QESYEFKSTV	
M.mulatta_NCX1.3	.....DEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
O.cuniculus_NCX1.2	.....EEYDDKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
S.tropicalis_NCX1	GKPVLRKVVQRDHPPIIPSTVILTEENEEKQPLTSKEE	ERR	IAEMGR	FI	LGEHTKL	EVII	ESYEFKSTV	
O.mossambicus_NCX1.1	GRDIYRKVQGREHPVPSNIISIA.EDGAEELTKKEE	ERR	IAEMGR	FI	LGEHVKL	EVII	ESYEFKSTV	
O.mykiss_NCX1	GRDVYRKVQGRDNPVPATIIISLA.EEGDEEALSKKEE	ERR	IAEMGR	FI	LGEHVKL	EVII	ESYEFKSTV	
D.rerio_NCX1a	GRDVYRKVQGRDKPIIPSTIISIS.EDGEETLTKKEE	ERR	IAEMGR	FI	LGEHVKL	EVII	ESYEFKSTV	
H.sapiens_NCX3.3	.....LTMEEE	EAKR	IAEMGR	FI	LGEHPKL	EVII	ESYEFKSTV	
R.norvegicus_NCX3.3	.....LTMEEE	EAKR	IAEMGR	FI	LGEHPKL	EVII	ESYEFKSTV	
M.musculus_NCX3.1	.....LTVEEE	EAKR	IAEMGR	FI	LGEHPKL	EVII	ESYEFKSTV	
G.gallus_NCX3	.....LTVEEE	EAKR	IAEMGR	FI	LGEHPKL	EVII	ESYEFKSTV	
D.rerio_NCX4a	.....DSNDNKPAVGA	EEE	VAKMGC	PS	LGEHTKL	EVII	ESYEFKSTV	
T.nigroviridis_NCX4a	.....DTNDNKTSVGP	ED.	VSKMGC	PS	LGEHTKL	EVII	ESYEFKSTV	
H.sapiens_NCX2.1	.....LTAEEE	EARR	IAEMGR	FI	LGENCRLE	EVII	ESYDFKNTV	
R.norvegicus_NCX2.1	.....LTAEEE	EARR	IAEMGR	FI	LGENCRLE	EVII	ESYDFKNTV	
M.musculus_NCX2.1	.....LTAEQE	EARR	IAEMGR	FI	LGENCRLE	EVII	ESYDFKNTV	
S.kowalevskii_3	.....ENSGNHMTE	DEKR	VAEMGR	FI	LGDILKCE	EIKI	LESTEFKNTV	
T.adhaerens_2	.....DKKRIEKERNHVAKT	TGN	QPIDVN	PS	LGPYKEA	EVII	ESHEFKNTV	
L.opalescens_NCX	.....VL	.....	AELG	KPR	RGENIKIT	VHII	ESTEFKSVV	
A.mellifera_NCX	.....TAEK	MALLG	KPK	LGEVFRA	QIRIK	ESKEFKNTV		
D.melanogaster_NCX	.....QDLT	ELDR	ILLLS	KFR	NGELTAY	VRI	RESQEFKATI	
H.magnipapillata	.....KDD	DLRK	VLEVG	KPT	LGDHKAC	EIKI	VESKEFRKTI	
C.elegans_NCX1	.....	.....	.....	.....	FSRCK	VVIT	EDREFKNTV	
C.briggsae_NCX1	.....	.....	.....	.....	.....	.....	.....	
C.elegans_NCX2	QTNSPHLTSRFRNRLGWSWIAGMKGNGDDEVTTSLTP	SQLE	IAEMGR	FI	LGEFTKC	QITR	ESKEFFQGI	
C.briggsae_NCX2	QSNPSPHLTSRFRNRLGWSWIAGMKGNGDDEVTTALTP	SQLE	IAEMGR	FI	LGEFTKC	QITR	ESKEFFQGI	
T.spiralis	.....	.....	.....	.....	GKAS	LGACQSI	VVTI	VNDNISRY
M.brevicollis_1	.....	.....	.....	.....	GST	LGKVT	CRVVI	LNDDKAQRL
Salpingoeca	.....	.....	.....	.....	DVT	FGEVTK	KITIL	NDDVTTLA
S.kowalevskii_1	.....	.....	.....	.....	DGAK	LGKTR	TSVIT	IVNDDIYNSLL
S.kowalevskii_2	.....	.....	.....	.....	DGAK	LGKTR	TSVIT	IVNDDIYNSLL
T.adhaerens_1	.....	.....	.....	.....	GGAK	LGSRT	TRTALT	IVNDDVYNSLL
D.pulex_1	.....	.....	.....	.....	GGAV	LGSIT	KLAVT	ITNDEEFNSVL
P.humanus_corporis	.....	.....	.....	.....	NDAS	LGDIK	VICVT	ITNDEDFANII
O.dioica	.....	.....	.....	.....	TGA	AMGH	TRET	VTVIGDEEYKNSLV
A.pisum	.....	.....	.....	.....	GGAR	IGNV	NRIAT	ITISSDDDFDSVV
P.marinus	.....	.....	.....	.....	GGAK	FCS	.....	.....KTDGGH
A.anophagefferens_1	.....	.....	.....	.....	KNFK	CAV	.....	.....ERAKFG
E.huxleyi	.....	.....	.....	.....	GGAS	LGEI	GRAVV	IESDDERRALV
C.intestinalis	.....	.....	.....	.....	NFS	QGS	SHLGE	HSAAVNVN..IN..
B.floridae	.....	.....	.....	.....	NFS	LGS	KIGEP	PGAAGVF..LCKDE
T.adhaerens_3	.....	.....	.....	.....	NAS	MGAR	RIGEIG	ATIVSFDIERDA
N.vectensis_2	.....	.....	.....	.....	DE	STGA	RIGN	RTATVHIISSGI..
consensus>50	.....	.....	.....	.....	e	iaemg	.p.lge	.....evii.es.efk.tv

	730	740	750	760	770	780	
H.sapiens_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
P.troglodytes_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
C.familiaris_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
F.catus_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
C.porcellus_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
B.taurus_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
R.norvegicus_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
M.musculus_NCX1.1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
M.mulatta_NCX1.3	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
O.cuniculus_NCX1.2	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
S.tropicalis_NCX1	DKLIKKTNLALV...	VGTNSWREQFI	EAITVSAG	E.E.....	DDDDDECG	EEKLPSCFDYVMHFL	
O.mossambicus_NCX1.1	DKLIKKTNLALL..	IGTNSWREQFI	EAITVSSG	DDD..E	FCR	EEKLPSCFDYVMHFL	
O.mykiss_NCX1	DKLIKKTNLALL..	IGTNSWRQOFM	EAITVSSG	DDDEDE	CG	EEKLPSCFDYVMHFL	
D.rerio_NCX1a	DKLIKKTNLALL..	VGTNSWRDQFV	EAITVSSG	DDDDDE	CG	QEKMPSCFDYVMHFL	
H.sapiens_NCX3.3	DKLIKKTNLALV...	VGTHSWRDQFM	EAITVSSA	G.....	DEDEDE	SG	EEKLPSCFDYVMHFL
R.norvegicus_NCX3.3	DKLIKKTNLALV...	VGTHSWRDQFM	EAITVSSA	G.....	DEDEDE	SG	EEKLPSCFDYVMHFL
M.musculus_NCX3.1	DKLIKKTNLALV...	VGTHSWRDQFM	EAITVSSA	G.....	DEDEDE	SG	EEKLPSCFDYVMHFL
G.gallus_NCX3	DKLIKKTNLALV...	VGTHSWRDQFL	EAITVSSA	G.....	DEDEDE	SG	EEKLPSCFDYVMHFL
D.rerio_NCX4a	DKLIKKTNLALV...	VGSSSWREQFV	SAITVSSA	G.....	DDDEES	SG	EEKLPSCFDYIMHFL
T.nigroviridis_NCX4a	DKLIKKTNLALV...	VGSSSWREQFV	SAITVSSA	G.....	DDDEES	SG	EEKLPSCFDYIMHFL
H.sapiens_NCX2.1	DKLIKKTNLALV...	IGTHSWREQFL	EAITVSSA	DE.....	EEEEDE	GSR	EEKLPSCFDYVMHFL
R.norvegicus_NCX2.1	DKLIKKTNLALV...	IGTHSWREQFL	EAITVSSA	DE.....	EEEEDE	GSR	EEKLPSCFDYVMHFL
M.musculus_NCX2.1	DKLIKKTNLALV...	IGTHSWREQFL	EAITVSSA	DE.....	EEEEDE	GSR	EEKLPSCFDYVMHFL
S.kowalevskii_3	DKLIKKANLSLV..	VGTSWREQFV	EAITVSSG	.....	DEDEDE	G	EEKLPSCFDYVMHFL
T.adhaerens_2	DKLLKKANLAMA...	IGTSTWREQFRA	AALTVNGD	N.....	DDDD	...	EETKPTCTDYIMHYL
L.opalescens_NCX	DKLLKKANLSLV..	VGTSWREQFI	EAITVNAE	G.....	DDDD	EGE	EEKLPSCMDYIMHFL
A.mellifera_NCX	DKLVQRANASIL..	LGTSSWKEQFT	EALTVS	GGDE.....	D..DEGGG	...	EPAAPSTLDYLMHGV
D.melanogaster_NCX	DKLVAKANVSAV..	LGTSSWKEQFK	DALTVIPAD	E.....	SEFDND	DE	EEEVPSCFSYVSHFV
H.magnipapillata	DQMLSANKSIL...	..GSSSWAQKF	DAFQVEY	GG.....	..DEEEG	...	DDVEPTYGDYVMHFL
C.elegans_NCX1	DRALVTANTSIM..	VGTSWKKQFT	EAWTLEP	.....	..EE	EDGE	EVVTMEKVMHYI
C.briggsae_NCX1	DKVLVTANTSIM..	VGTSWKKQFT	EALWLEP	.....	..EE	EGDV	SLQEKIMHYV
C.elegans_NCX2	DRMIKNANTRIM..	LGTHSWREQFM	EALVVS	SAGDD.....	DDDEGED	G	EDEGEEKPEEPGCMYVMHVL
C.briggsae_NCX2	DRMIKNANTRIM..	LGTHSWREQFM	EALVVS	SAGDD.....	DDDEED	G	DDGEEKPEEPGCMYFMHVL
T.spiralis	AKFEEKVRQSLLTCK	LESSTWKEQFL	LKAVSV	NGG.....	.....	ETSDA	SMVDCFAHII
M.brevicollis_1	EKVSRMRKINMDRFR	VGSSDWKQF	RDV	.....	..AWPE	..	REAGVLGIVMHLI
Salpingoeca	DKVTALLNLNDKFR	IGGTDWKSQFV	DAL	.....	..AWPE	..	EGSGTFAIVMHLI
S.kowalevskii_1	DRVVSITNVNLDRLR	IGNASWADQFK	EAM	.....	..NVNGG	DI	ESATWVDYVMHFL
S.kowalevskii_2	DRVVSITNVNLDRLR	IGNASWADQFK	EAM	.....	..NVNGG	DI	ESATWVDYVMHFL
T.adhaerens_1	DKVVALTRINVHRLK	LGSQSWGEQFT	NAM	.....	..TVNGG	DV	ENATGMDYFLHFL
D.pulex_1	NRVLADMTTANVDSME	VHHSWTWSQIK	DAM	.....	..NVNGG	DI	ENATTSDDYVMHFL
P.humanus_corporis	DKMLAMTNLKLKTL	IYRKTTWASQIK	DAM	.....	..NVNGG	DV	KNATATDYVLHFI
O.dioica	KRVAAQTHVALSKME	IGGDSWYEQFV	EAM	.....	..NVNGG	DI	ENATGFDYIMHLL
A.pisum	DRMLLNTNINHALE	LHRQTWAEQIKT	AM	.....	..TVNGG	DL	TNATTLTYVLHFF
P.marinus	DSLICTIWIKPKSGI	SQGRTTVTDL	LVHWGRMS	LGATNWR	EQFNEAL	LVNGSRE	EQEAGVGDWVMHVI
A.anophagefferens_1	KHTELVVIVADTET	KDMI	DNVQRYL	ESNDASYN	VGSTWQG	QFSDAL	KVGGGDADDFFKASAGDWMHII
E.huxleyi	KQVASLMSLNV	DAMQLAGA	SWREQLA	EAVTFEPP	RQATTAR	ALDGP	LLGGASPPAALSLS
C.intestinalis	LEACGINSMSRVLID	ENDTTWVGQ	IRNAMIV	.....	..GGEMDDY	G	NESPSNTDFLMHAI
B.floridiae	LAERVANVPMGDTE	EEDT	SWGQFR	SAMCL	.....	..E	SEDEDEGKKIPSPVQQLIMHFV
T.adhaerens_3	LGDRVAEFAALNGVE	GEDV	SWAEQFT	NALTV	.....	..G	SDIDFGEESPSNLDYILHFI
N.vectensis_2	.....	.....	..AMI	.....	..G	DEDKD	NEPLNSIDFIMHFL
consensus>50	dklikktnlal...	vgt.swreqf.eaitvs.g	.....	ddddd	e.g	.....	ee.lpscfdyvmhfl

	790	800	810	820	830	840
H.sapiens_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
P.troglodytes_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
C.familiaris_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
F.catus_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
C.porcullus_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
B.taurus_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
R.norvegicus_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
M.musculus_NCX1.1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
M.mulatta_NCX1.3	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
O.cuniculus_NCX1.2	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
S.tropicalis_NCX1	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
O.mossambicus_NCX1.1	TIFWKL	LLFAFV	PPTDY	W..	NGWACFVVISI	SMIGL
O.mykiss_NCX1	TVFWKL	LLFAFV	PPTDY	W..	NGWACFVVISI	SMIGL
D.rerio_NCX1a	TVFWKVLF	FVFP	PPTDY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
H.sapiens_NCX3.3	TVFWKVLF	FACV	PTEYC	..	HGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
R.norvegicus_NCX3.3	TVFWKVLF	FACV	PTEYC	..	HGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
M.musculus_NCX3.1	TVFWKVLF	FACV	PTEYC	..	HGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
G.gallus_NCX3	TVFWKVLF	FACV	PTEYC	..	HGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
D.rerio_NCX4a	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
T.nigroviridis_NCX4a	TVFWKVLF	FVFP	PTEY	W..	NGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
H.sapiens_NCX2.1	TVFWKVLF	FACV	PTEYC	..	HGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
R.norvegicus_NCX2.1	TVFWKVLF	FACV	PTEYC	..	HGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
M.musculus_NCX2.1	TVFWKVLF	FACV	PTEYC	..	HGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
S.kowalevskii_3	SIFWKL	ILFALV	PPTDI	W..	GGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
T.adhaerens_2	TIFWKL	LIFALV	PPTDI	W..	GGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
L.opalescens_NCX	CLFWK	VLFALV	PPTDI	W..	GGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
A.mellifera_NCX	TILWKL	VLFALV	PPTDI	A..	GGYLCFVVISI	FGIGV
D.melanogaster_NCX	CLFWK	VLFALV	PPTDI	C..	GGYVTFVVISI	FVIGV
H.magnipapillata	SFFWK	VLFALV	PPTDI	W..	GGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
C.elegans_NCX1	ALPWK	LLFALV	PPTDI	F..	NGWLCFVVAIAMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
C.briggsae_NCX1	ALPWK	LLFALV	PPTDI	F..	NGWCCFVVAIAMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
C.elegans_NCX2	TVPWK	LTFAV	PPTDI	F..	GGWATFVVAIAMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
C.briggsae_NCX2	TVPWK	LTFAV	PPTDI	F..	GGWATFVVAIAMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
T.spiralis	AFPWK	VIAAFV	PPTTI	F..	GGWLAFFIVALALMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
M.brevicollis_1	TLPWK	VLAACV	PPTVF	VH..	GGWVAFGVALCFMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
Salpingoeca	NIPWK	IIAACV	PPTFL	LN..	GGWVTFGSALMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
S.kowalevskii_1	TFGWK	VIFALV	PPPS	FLNSG	GGWICFVVAIAMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
S.kowalevskii_2	SFGWK	VIFALV	PPPS	FLDSG	GGWISFCVALTFMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
T.adhaerens_1	TFGWK	VIFALV	PPPS	ML..	GGWLTFFIASLGMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
D.pulex_1	TFGWK	LLFALV	PPAGI	W..	GGWLSFVSLVVMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
P.humanus_corporis	SFNWK	VLSFV	PPSMF	..	RGWLCFIVSLCAMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
O.dioica	TFGFK	TIFALV	PPSNM	G..	GGFPCEFGLSLMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
A.pisum	SFFWK	VVFALV	PPAAV	FS..	GGWLRFFTSLLMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
P.marinus	TFPWK	IVFALV	PPLEY	A..	GGWLTFFISLSTMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
A.anophagefferens_1	TLPWK	VAFALV	PPTSY	G..	GGWVCFYVALTFMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
E.huxleyi	ALPWR	LLFALV	PPRVA	..	GGWACFIVSILMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
C.intestinalis	SMPWK	IVFALV	PPTRH	AY..	GGFPFAFISLGMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
B.floridiae	TFFWK	VLFALV	PPRSM	L..	GGWPAFVMSLGMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
T.adhaerens_3	AFLWK	IIAATV	PPRTV	L..	GGWPAFVLSLVYGMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
N.vectensis_2	TFFWK	VLFALV	PPRPL	L..	GGWPAFVLSLGMIGL	LTAFIGDLASHFGCTIGLKDSVTAVV
consensus>50	tvfkwk	vlfafv	pptey	...	gwaCFivsi.mig	ltaIigdlashfgCtIglkds!tav.f!alGtsvppD

	850	860	870	880	890
H.sapiens_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
P.troglodytes_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
C.familiaris_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
F.catus_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
C.porcullus_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
B.taurus_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
R.norvegicus_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
M.musculus_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
M.mulatta_NCX1.3	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
O.cuniculus_NCX1.2	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
S.tropicalis_NCX1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIYHAA
O.mossambicus_NCX1.1	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAVYHT
O.mykiss_NCX1	TFASKVAA	TQDQY	ADAFIGNVT	GSAVNV	FLGIGVAWSIAAIYHNS
D.rerio_NCX1a	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWSIAAIFHQS
H.sapiens_NCX3.3	TFASKAAA	LQDQY	ADASIGNVT	GSAVNV	FLGIGLAWSVAAIYWAL
R.norvegicus_NCX3.3	TFASKAAA	LQDQY	ADASIGNVT	GSAVNV	FLGIGLAWSVAAIYWAM
M.musculus_NCX3.1	TFASKAAA	LQDQY	ADASIGNVT	GSAVNV	FLGIGLAWSVAAIYWAM
G.gallus_NCX3	TFASKAAA	LQDQY	ADASITNVT	GSAVNV	FLGIGLAWSVAAIYWAS
D.rerio_NCX4a	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWTIAAVYWHS
T.nigroviridis_NCX4a	TFASKVAA	TQDQY	ADASIGNVT	GSAVNV	FLGIGVAWTIAAVYWHS
H.sapiens_NCX2.1	TFASKVAA	LQDQC	ADASIGNVT	GSAVNV	FLGLGVAWSVAAVYWAV
R.norvegicus_NCX2.1	TFASKVAA	LQDQC	ADASIGNVT	GSAVNV	FLGLGVAWSVAAVYWAV
M.musculus_NCX2.1	TFASKVAA	LQDQC	ADASIGNVT	GSAVNV	FLGLGVAWSVAAVYWAV
S.kowalevskii_3	TFASKTAA	VQDKY	ADASVGNVT	GSAVNV	FLGIGLAWSAAIYWAA
T.adhaerens_2	TFASKTAA	VNDKY	ADSSIGNVT	GSAVNV	FLGLGLAWCVAAVANAI
L.opalescens_NCX	TFASKVAA	LNDKY	ADSSIGNVT	GSAVNV	FLGIGIAWSIAAIYHAA
A.mellifera_NCX	TFASKVAA	CQDKY	ADASVGNVT	GSAVNV	FLGIGVAWSIAAIYHAL
D.melanogaster_NCX	TFASMIAA	KHDEG	ADNCIGNVT	GSAVNV	FLGIGLAWTIAAVYHSS
H.magnipapillata	TFASKVAT	INDEH	ADGSIGNVT	GSAVNV	FLGIGLAWSAAIYHAS
C.elegans_NCX1	TFASRTAA	VGDQW	ADGSIGNVT	GSAVNV	FLGIGIAWMIACVHAY
C.briggsae_NCX1	TFASRTAA	VGDQW	ADGSIGNVT	GSAVNV	FLGIGIAWMIACVHAY
C.elegans_NCX2	TFASKVSA	VQDKY	ADNAVGNVT	GSAVNV	FLGIGIAWSMAAIYHWN
C.briggsae_NCX2	TFASKVSA	VQDKY	ADNAVGNVT	GSAVNV	FLGIGIAWSMAAIYHWN
T.spiralis	TFASRLAA	LQDKT	ADNAIGNVT	GSAVNV	FLGLGLPWFIAVYWAA
M.brevicollis_1	TFASRSAT	LASKT	ADAAVTNVT	GSAVNV	FLGLGLSFWIAAVYWPA
Salpingoeca	TFASMSAT	IASDT	ADAAITNVT	GSAVNV	FLGLGLSFWIAAVYWPV
S.kowalevskii_1	LFASKTAA	VNEKY	ADASIGNVT	GSAVNV	FLGLGLSFWIASIYWTS
S.kowalevskii_2	LCVSKKAS	VGEKY	ADCCM	TGSYSVY	VFGLGLSFWVTASIYWTS
T.adhaerens_1	LFASKTAA	LNEKY	ADNSIGNVT	GSAVNV	FLGLGLPWLIIATIIYWNS
D.pulex_1	LFASRAAA	MNEKY	ADNAIGNVT	GSAVNV	FLGLGLPWLIIASIIYHAS
P.humanus_corporis	TFASRTAA	LKEQY	ADTSIGNVT	GSAVNV	FLGLGLPWLIIATIIYHTH
O.dioica	LFASKIAA	TNEPN	ADDAVGNVT	GSAVNV	FLGLGLPWSMAAIYHYC
A.pisum	ILGACMVT	RAETH	ADEAMIIH	AGSI	IAVKVLMCVGLPWFISALYHYS
P.marinus	TFASRLAA	MQDPY	ADASIGNVT	GSAVNV	FLGLGLPWFVIGSLYWS
A.anophagefferens_1	AFASKAAT	INDDS	ADAAVGNVT	GSAVNV	FLGLGLPWSIAAIYWS
E.huxleyi	TFASRTAA	VKERERH	ADSSIGNVT	GSAVNV	FLGLGLPWLAAALFWASPRGAAQEASWRDRYRGEAWYSE
C.intestinalis	TFASRTAA	LQDDY	ADASIGNVT	GSAVNV	FLGLGLPWFVIRTMYFAV
B.floridae	TFASRTVA	LHDVH	ADAAIGNVT	GSAVNV	FLGLGLPWFVISTMYHLI
T.adhaerens_3	TFASRNAA	VHDHS	ADASIGNVT	GSAVNV	FLGLGLPWFVLTYYRQI
N.vectensis_2	TFASRSAA	LQDTG	ADAAIGNVT	GSAVNV	FLGLGLPWFVIMSTCYHAA
consensus>50	tfaskvaa	tdqdy	Adasignvt	Gsnavnv	flgigvawsiaaiyha

	900	910	920	930	940	950	960
H.sapiens_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
P.troglodytes_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
C.familiaris_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
F.catus_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
C.porcullus_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
B.taurus_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
R.norvegicus_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
M.musculus_NCX1.1	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
M.mulatta_NCX1.3	.NGEQFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
O.cuniculus_NCX1.2	.NGEHFKVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	SCLFVLLWLLYIFFS
S.stropicalis_NCX1	.NGDVFVSPGT	LAFSVTLFTI	FAFINVG	VLLYRRRPEI	.G.	GELGGPRTAKLLT	TALFTLWLLYIFFS
O.mossambicus_NCX1.1	.QGQEFKVNPGT	LAFSVTLFTI	FAFICIA	VLLYRRRPEI	.G.	GELGGPIPKILIT	TCLFFSLWLMYIVFS
O.mykiss_NCX1	.KGNDFRVDPGT	LAFSVTLFTI	FAFVAVA	VLMYRRRPEI	.G.	GELGGPGRP	KIATTCFFSLWLMYIVFS
D.rerio_NCX1a	.QGRQFRVDPGT	LAFSVTLFTI	FAFVCI	VLMYRRRPEI	.G.	GELGGPGRP	KIATTCFFSLWLMYIVFS
H.sapiens_NCX3.3	.QGQEFHVSAGT	LAFSVTLFTI	FAFVCIS	VLLYRRRPHL	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
R.norvegicus_NCX3.3	.QGQEFHVSAGT	LAFSVTLFTI	FAFVCLS	VLLYRRRPHL	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
M.musculus_NCX3.1	.QGQEFHVSAGT	LAFSVTLFTI	FAFVCLS	VLLYRRRPHL	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
G.gallus_NCX3	.QGQEFHVSAGT	LAFSVTLFTI	FAFVCLS	VLLYRRRPHL	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
D.rerio_NCX4a	.QGGKFFQVPPGS	LAFSVTLFTI	LALVCV	TLLYRRRPSVSG	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
T.nigroviridis_NCX4a	.KGGKFFQVPPGS	LAFSVTLFTI	MALVCV	TLLYRRRPSVSG	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
H.sapiens_NCX2.1	.QGRPFVEVRTGT	LAFSVTLFTV	FAFVGI	VLLYRRRPHI	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
R.norvegicus_NCX2.1	.QGRPFVEVRTGT	LAFSVTLFTV	FAFVGI	VLLYRRRPHI	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
M.musculus_NCX2.1	.QGRPFVEVRTGT	LAFSVTLFTV	FAFVGI	VLLYRRRPHI	.G.	GELGGPGRP	KLATTFWLFVSLWLLYILFA
H.sapiens_NCX1.3	.KGEVFEVKPGS	LAFSVTIYSI	FAFVIAIT	VLMYRRRKLNTL	.G.	GELGGPKTT	KIITSCFLVGLWLLYILFA
T.adhaerens_2	.KGEKFFVPSGS	LAFSVTIFCAV	AVICIA	VLMYRRRTPSVSG	.G.	GELGGPGRP	KIATTFWLFVSLWLLYILFA
L.opalescens_NCX	.NGTVFRVDPGT	LAFSVTIFCV	FAVCTIV	VLLYRRRHHLV	.G.	GELGGPGRP	KIATTFWLFVSLWLLYILFA
A.mellifera_NCX	.HGDKFRVDPGN	LAFSVTLFCTE	ACLVL	VLLYRRR	.KSI	GELGGPFPV	KVITSLILFFLWVFLYILMS
D.melanogaster_NCX	.HGMTFNVDPGT	IGFVALFCGE	ALIAIM	LIMYRRRWHKIG	.G.	AELGGPKVS	KYISAAILVFWVYVVIC
H.magnipapillata	.NGNKFVDPGS	LGFSVLMFCLE	ASVCI	GILMYRRSSKNIR	.G.	AELGGPSI	SRYITFTFLFLWLIYLLVS
C.elegans_NCX1	.RGTKFLVATGS	LAFSVTMFLI	GSVVCV	ALLQYRRFNRKVN	.G.	GELGGPMG	WRISAGIFVSVWLLYILLS
C.briggsae_NCX1	.RGTKFLVSTGS	LAFSVTMFLI	GSVVCV	ALLQYRRFNRKIN	.G.	GELGGPTSW	RVISAGIFVSVWLLYILLS
C.elegans_NCX2	.QGTKFLVDPGN	LGFSVLI	FCTEAVLCI	IVLVR	.NKKV	GELGGPIAL	RWMTAMFFASLWFMYL
C.briggsae_NCX2	.RGTKFLVDPGN	LGFSVLI	FCTEAVLCI	IVLVR	.SKKV	GELGGPIAL	RWMTAMFFASLWFMYL
T.spiralis	.RGEAFVVSAGD	LGFSVLI	FCTEAVLCI	IVLVR	.G.	AELGGPTIP	KWICSVTLILFWFLYILLS
M.brevicollis_1	HDGAFVVSAGD	LGFSVLI	FCTEAVLCI	IVLVR	.YKF	GAEELGGPY	SRQ..FAFFFI
Salpingoeca	YSNAVFWVPSGD	LAFSVIIFSL	CCIC	ICLGTLLVRR	.YTV	GAEELGGAY	AKP..TAALFL
S.kowalevskii_1	..VFEMEAGALS	SFSVMYTI	CAIMCLS	LLVRRFIPFF	GKAE	ELGGPTAG	RYSSIFLILLWIIYILLC
S.kowalevskii_2	..VFVVDSSS	SFSVMYTI	CAIMCLS	LLVRRFIPFF	GKAE	ELGGPTAG	RYSSIFLILLWIIYILLC
T.adhaerens_1	..EFVAVPAGN	LASVILFTI	CAVICIA	ALLMRR	IIPSF	GSELGGPT	TKSKYISGLLWIVYVVIS
D.pulex_1	..EFKVEAGS	LGFSITVFTI	ITAVLS	LALLVTR	CSAAC	GRGELGGP	LGTRYASAI
P.humanus_corporis	..VFVVPAGT	LGFSVLLFTI	SAVIAI	ALLIGRR	NSSFC	GKAE	ELGGSVFFKLLSGGLLILWVYVIVMS
O.dioica	..TFNVPPGS	LVFSVTIFSI	CAVCTIA	FLPLR	TLSYFG	NAELGGP	QKQKWFSGIFLILWLFYVLS
A.pisum	..LFELIPSTR	IGFNVLLYSV	MAILAVT	VLMVRR	NVFFPK	KAELGGP	TKGRYITVAI
P.marinus	YPDGGFVVEAGD	LSFSVMI	FTICAF	FLCLT	VLVARR	.AKY	GELGGTKHGRISAAILTYALEVDVTSN
A.anophagefferens_1	GKDVAFIVPAGN	LGLSVGV	FVFCAC	CTCLG	VLYARR	.KAY	GAEELGGDRTMANRHATLFWMLWFLYVAMS
E.huxleyi	AMPVAFVVASGD	LGFSVAVFTV	LALVCLA	VLYARR	.ATV	GELGGGAAS	KYSTATLFTALWLGWIWLS
C.intestinalis	GGQ..YIVDTDG	LDFAVTLFDS	FAGVVCV	VLLILRR	.YVL	GELGGSTRV	KWASGIFLFTLWFIIVS
B.floridiae	GTQ..YRVLPGN	LRFAVFTFLAVG	SLCCLMLFVRR	.KCF	GELGGK	KVVKWISAL	LMFSRWFVFIIVLC
T.adhaerens_3	FNSMDYAI	SPDMQFSVILFTV	VAGAGV	ILLFRR	.FVL	GELGGDI	KWQYITAAATLVLWVAVITLA
N.vectensis_2	GTV..YKVS	SGNLAFSVLVFAL	CGVCL	FLVLR	.YLY	KGELGGPT	LSKWTGLLLFLWFIYVLS
consensus>50	.ng.%%v.pg.lafs!t!%ti.a.icv.vllyRR.....g.gELGGpr..k.k..t..lfv.lwlllyi.ls						

H.sapiens_NCX1.1	SLEAYCHIKGF
P.troglodytes_NCX1.1	SLEAYCHIKGF
C.familiaris_NCX1.1	SLEAYCHIKGF
F.catus_NCX1.1	SLEAYCHIKGF
C.porcillus_NCX1.1	SLEAYCHIKGF
B.taurus_NCX1.1	SLEAYCHIKGF
R.norvegicus_NCX1.1	SLEAYCHIKGF
M.musculus_NCX1.1	SLEAYCHIKGF
M.mulatta_NCX1.3	SLEAYCHIKGF
O.cuniculus_NCX1.2	SLEAYCHIKGF
S.tropicalis_NCX1	SLEAYCHIKGF
O.mossambicus_NCX1.1	SLEAYCHVKGF
O.mykiss_NCX1	SLEAYCHVKGF
D.rerio_NCX1a	SMEAYCIKGF
H.sapiens_NCX3.3	TLEAYCIKGF
R.norvegicus_NCX3.3	TLEAYCIKGF
M.musculus_NCX3.1	TLEAYCIKGF
G.gallus_NCX3	TLEAYCIKGF
D.rerio_NCX4a	SLEAYCHVPGF
T.nigroviridis_NCX4a	SLEAYCHVHSF
H.sapiens_NCX2.1	SLEAYCHIRGF
R.norvegicus_NCX2.1	SLEAYCHIRGF
M.musculus_NCX2.1	SLEAYCHIRGF
S.kowalevskii_3	SFESYIEGF
T.adhaerens_2	SLESYCHIPGF
L.opalescens_NCX	GLMSYCHIPGF
A.mellifera_NCX	ILEAYGYIEGF
D.melanogaster_NCX	ILEAYDVRV
H.magnipapillata	GLESYCYFTLKF
C.elegans_NCX1	TLEAYCIKGF
C.briggsae_NCX1	TLEAYVIKGF
C.elegans_NCX2	ALEAYCIIPGF
C.briggsae_NCX2	ALEAYCIIPGF
T.spiralis	ALQAYGHISF
M.brevicollis_1	SLQVEGYIASI
Salpingoeca	SLSTYEHISL
S.kowalevskii_1	SLQAYGYIHF
S.kowalevskii_2	SFQSYDYIDF
T.adhaerens_1	SLQVYRIIPVKT
D.pulex_1	SLETYGHITGF
P.humanus_corporis	CLKEYRVLDVNF
O.dioica	TLQAYEFIPGF
A.pisum	CFQPF
P.marinus	GVALNSNLHLNYRDASDVDRGEY
A.anophagefferens_1	ILASEGIV
E.huxleyi	IAKTEGDPRLARLLQQLPPQARALLGA
C.intestinalis	SLKAYNYF
B.floridae	SLKAYDLLPF
T.adhaerens_3	SLRAYDVIRFQ
N.vectensis_2	SLMAYGHISGL
consensus>50	sleayc.i.gf