

CCNE1

Unconserved 0 1 2 3 4 5 6 7 8 9 10 Conserved

	..... 10	20	30	40	50
Human_CCNE1	-----	-----	-----	-----	-----
Macaca_CCNE1	-----	-----	-----	-----	-----
Horse_CCNE1	-----	-----	-----	-----	-----
Mouse_Ccne1	-----	-----	-----	-----	-----
Platypus_CCNE1	-----	-----	-----	-----	-----
Chicken_CCNE1	-----	-----	-----	-----	-----
Lizard_CCNE1	-----	-----	-----	-----	-----
Opossum_CCNE1	MSRESGSEYY	QEKEEFTQDV	KEEHVDEKED	SNPDELVNGK	EEP SHDELMN
Frog_cyce1	-----	-----	-----	-----	-----
Zebrafish_ccne1	-----	-----	-----	-----	-----
Consistency	0000000000	0000000000	0000000000	0000000000	0000000000
	..... 60	70	80	90	100
Human_CCNE1	-----	-----	-----	-----	-----
Macaca_CCNE1	-----	-----	-----	-----	-----
Horse_CCNE1	-----	-----	-----	-----	-----
Mouse_Ccne1	-----	-----	-----	-----	-----
Platypus_CCNE1	-----	-----	-----	-----	-----
Chicken_CCNE1	-----	-----	-----	-----	-----
Lizard_CCNE1	-----	-----	-----	-----	-----
Opossum_CCNE1	GTHEQSHDVP	MNGTHEPSPD	ELFDGEEDPS	IDELVYGDDD	PSFDEVIYEE
Frog_cyce1	-----	-----	-----	-----	-----
Zebrafish_ccne1	-----	-----	-----	-----	-----
Consistency	0000000000	0000000000	0000000000	0000000000	0000000000
	..... 110	120	130	140	150
Human_CCNE1	-----	-----	-----	-----	-----
Macaca_CCNE1	-----	-----	-----	-----	-----
Horse_CCNE1	-----	-----	-----	-----	-----
Mouse_Ccne1	-----	-----	-----	-----	-----
Platypus_CCNE1	-----	-----	-----	-----	-----
Chicken_CCNE1	-----	-----	-----	-----	-----
Lizard_CCNE1	-----	-----	-----	-----	-----
Opossum_CCNE1	EDPNPDELVC	EEEGASLDEL	ICEEEDASLD	ELVCEEEGAS	LDELVCEEED
Frog_cyce1	-----	-----	-----	-----	-----
Zebrafish_ccne1	-----	-----	-----	-----	-----
Consistency	0000000000	0000000000	0000000000	0000000000	0000000000
	..... 160	170	180	190	200
Human_CCNE1	-----	-----	-----	-----	-----
Macaca_CCNE1	-----	-----	-----	-----	-----
Horse_CCNE1	-----	-----	-----	-----	-----
Mouse_Ccne1	-----	-----	-----	-----	-----
Platypus_CCNE1	-----	-----	-----	-----	-----
Chicken_CCNE1	-----	-----	-----	-----	-----
Lizard_CCNE1	-----	-----	-----	-----	-----
Opossum_CCNE1	PNADELICEE	DPSPDELMCD	EEEASPEELI	CDEEDPHADE	LICEEEDPNP
Frog_cyce1	-----	-----	-----	-----	-----
Zebrafish_ccne1	-----	-----	-----	-----	-----
Consistency	0000000000	0000000000	0000000000	0000000000	0000000000
	..... 210	220	230	240	250
Human_CCNE1	-----	-----	-----	-----	-----
Macaca_CCNE1	-----	-----	-----	-----	-----
Horse_CCNE1	-----	-----	-----	-----	-----
Mouse_Ccne1	-----	-----	-----	-----	-----
Platypus_CCNE1	-----	-----	-----	-----	-----
Chicken_CCNE1	-----	-----	-----	-----	-----
Lizard_CCNE1	-----	-----	-----	-----	-----
Opossum_CCNE1	DDLICEEEDP	NVDLICEEEI	LHPDEEDDFI	CEEEDPNPID	LICEEEDPSF
Frog_cyce1	-----	-----	-----	-----	-----

Zebrafish_ccne1 -----
Consistency 0000000000 0000000000 0000000000 0000000000 0000000000

..... 260..... 270..... 280..... 290..... 300
Human_CCNE1 -----
Macaca_CCNE1 -----
Horse_CCNE1 -----
Mouse_Ccne1 -----
Platypus_CCNE1 -----
Chicken_CCNE1 -----
Lizard_CCNE1 -----
Opossum_CCNE1 RELICGEQDP SLHELFDGTD EPRPNRRENTP TPDGREDPKP DGREDPNPDN
Frog_cyfel -----
Zebrafish_ccne1 -----
Consistency 0000000000 0000000000 0000000000 0000000000 0000000000

..... 310..... 320..... 330..... 340..... 350
Human_CCNE1 -----MP RERRERD-AK ERDTMKEDG-
Macaca_CCNE1 -----MP RERRERD-AK ERDTMKEDG-
Horse_CCNE1 -----MP RERRERD-AQ ERDGMKEDS-
Mouse_Ccne1 -----MP ---RERD-ST DHSNMKEEG-
Platypus_CCNE1 -----MREDTN--
Chicken_CCNE1 -----MRRESDCAE EKAPAKGEG-
Lizard_CCNE1 -----MP ---SESDHQD KSAAIHEGG-
Opossum_CCNE1 KQDPSAGELF DGKENPRLNE HADGREERSPDGKEENKKSE TDSGREQRGS
Frog_cyfel -----M PVISNPPVEK GTKG-EER-----
Zebrafish_ccne1 ---MPSKKVLQ-----TE HINTDEA-P-----
Consistency 0000000000 0000000000 00000000024 0124534032 2221233230

..... 360..... 370..... 380..... 390..... 400
Human_CCNE1 GAEFSAARSRK RKANVTVFLQ DPDEEMAKID RTARDQCGSQ -PWDN-NAVC
Macaca_CCNE1 GAEFSAARSRK RKANVAVFLQ DPDEEMAKID RTARDQCGSQ -PWDN-NTGC
Horse_CCNE1 SADVSRSRK RKANVAVFLQ DPDEEIAKMD KTVRSQCGRQ -SWDS-NAVC
Mouse_Ccne1 GSDLSVRSRK RKANVAVFLQ DPDEEIAKID KTVKSEDSSQ -PWDD-NSAC
Platypus_CCNE1 -ADFTGRSRK RKADVAVFLQ DPDEEIAKAD VTKKRQFGNQ -PWNNGDIAIY
Chicken_CCNE1 GAEGTVRARK RKADVATFLQ DPDEEIAKIE MSRKKQYENQ ISWNN---IN
Lizard_CCNE1 APDFAVRSRK RKADVVIIFLP DPDEDVAGIQ MMKKKQNECQ QPSSN-----
Opossum_CCNE1 GSTDSSRSRK RKADVAVFLQ DPDEVLAKE TIGRT--AVR IP-----AFL
Frog_cyfel -ASCSVRSRK RKADVAIYLQ DPDETLDCL MTKKKQYQDR GPWSN-EMIC
Zebrafish_ccne1 -KTTSVRPRK RKADVAIHLQ DPDEEVT--E MTRKKQCASQ ACW-NPDTGY
Consistency 365375*7** ***7*888*7 *****677547 4648572448 0663603333

..... 410..... 420..... 430..... 440..... 450
Human_CCNE1 ADPCSLIPTP DKEDD-----DRVYPNSTCK PRIIAPSRGS PLFVLSWANR
Macaca_CCNE1 ADPCSLIPTP DKEDD-----ERVYPNSTCK PRIIAPSRGS PLFVLSWANR
Horse_CCNE1 ENPCSLIPTP DKEDD-----ELVYPN--CG PQSIAPSRAS PLFVLNWANR
Mouse_Ccne1 VDPSCFIPTP NKEEDN----ELEYPRTAFO PRKIRPPRAS PLFVLNWG NR
Platypus_CCNE1 GNPFCALIPTP DKEDDP----ASPSSPYGLR RFNL--TRTS PLPILGWANR
Chicken_CCNE1 KDPHMLIPTP DKDDDP----VGVDYSHFI-HLNVASTRSS PLPILGWANR
Lizard_CCNE1 -LPHTLIPTP DKEE-----LRSPKFSSI HKSLTAARDS PLFVLGWG NR
Opossum_CCNE1 RNPWSVILTP DKGGD-----EPSLPNSNMP THNFSQHRAT PLPILGWANR
Frog_cyfel KSPHKLIPTP EKEEHE---QNPTSYPHFA SLRFSPVSVS PLPRLGWANQ
Zebrafish_ccne1 TSPCRRIPTP DEVEEPVAFG SVGFTQYASE SIFITPTRST PLPALCWASK
Consistency 35*456*8** 8966610000 4334543332 4337444848 ***6*5*898

..... 460..... 470..... 480..... 490..... 500
Human_CCNE1 EEVWKIMLNK EKYTLRDQHF LEQHPLLPQK MRAILLDWLM EVCEVYKLHR
Macaca_CCNE1 EEVWKIMLNK EKYTLRDQHF LEQHPLLPQK MRAILLDWLM EVCEVYKLHR
Horse_CCNE1 EEVWKIMLNK EKYTLRDQHF LQRHPLLPQK MRAVLLDWLM EVCEVYKLHR
Mouse_Ccne1 EEVWRIMLNK EKYTLRDEHF LQRHPLLPQK MRAVLLDWLM EVCEVYKLHR
Platypus_CCNE1 DEVWKIMLNK EQTYLRDKHF LQRHPLLPQK MRAILLDWLM EVCEVYKLHR
Chicken_CCNE1 DDVWKNMINK EETVYVRDKLY MQRHPLLPQK MRTILLDWLM EVCEVYKLYR
Lizard_CCNE1 DEVWKNMIK EQTYVVRDKLY MQRHPLLPQK MRVILLDWLM EVCEVYKLHR
Opossum_CCNE1 DEVWKIMLSK EQVYLRDKNF MERHPSLQPR MRSILLDWMM EVSEVYKLHR
Frog_cyfel DDVWRNMLNK DRTYLRDKNF FQKHPQLQPN MRAILLDWLM EVCEVYKLHR
Zebrafish_ccne1 DEVWNNLLGK DKLYLRDTRV MERHPLLPQK MRAILLDWLM EVCEVYKLHR
Consistency 88**75997* 877*8**647 787**5**87 **79*****9* **8*****9*

..... 510..... 520..... 530..... 540..... 550

Human_CCNE1	ETFYLAQDFF	DRYMATQENV	VKTLLQLIGI	SSLFIAAKLE	EIYPPKLHQF
Macaca_CCNE1	ETFYLAQDFF	DRYMATQENV	VKTLLQLIGI	SSLFIAAKLE	EIYPPKLHQF
Horse_CCNE1	ETFYLAQDFF	DRYMATQQNV	VKTLLQLIGI	SSLFIAAKLE	EIYPPKLHQF
Mouse_Ccne1	ETFYLAQDFF	DRYMASQHNI	IKTLLQLIGI	SALFIAASKLE	EIYPPKLHQF
Platypus_CCNE1	ETFYLAQDFF	DRFMATQQNI	VKTLLQLIGI	SSLFIAAKLE	EIYPPKLHQF
Chicken_CCNE1	ETFYLAQDFF	DRFMATQQNV	VKTLLQLIGI	SSLFIAAKLE	EIYPPKLHQF
Lizard_CCNE1	ETFYLAQDFF	DRYMATHQNV	VKTLLQLIGI	SSLFIAAKRE	EIYPPKLQCF
Opossum_CCNE1	ETYYLAQDFF	DRYMATQRNI	TKTLLQLIGI	TSLFIAAKLE	EIYPPKLYQF
Frog_cyce1	ETFYLGQDFF	DRFMATQKNV	IKSRLQLIGI	TFLFIAAKLE	EIYPPKLHQF
Zebrafish_ccne1	ETFYLGQDYF	DRFMATQENV	LKTTLLQLIGI	SCLFIAAKME	EIYPPKVHQF
Consistency	**9**8**9*	**8**986*9	7*97*****	86*****9*7*	*****97**

	.....560.....570.....580.....590.....600				
Human_CCNE1	AYVTDGACSG	DEILTMELMI	MKALKWRSLSP	LTIVSWNLVY	MQVAYLNDLH
Macaca_CCNE1	AYVTDGACSG	DEILTMELMI	MKALKWRSLSP	LTIVSWNLVY	MQVAYLNDLH
Horse_CCNE1	AYVTDGACSG	AEILTMELII	MKALKWRSLSP	LTIVSWNLVY	MQVAYLNDLY
Mouse_Ccne1	AYVTDGACSG	DEILTMELMM	MKALKWRSLSP	LTIVSWNLVY	VQVAYVNDTG
Platypus_CCNE1	AYVTDGACTE	DEILSMELII	MKALKWNLSLSP	LTIVSWNLVY	MQVAYLNDFY
Chicken_CCNE1	AYVTDGACTE	DEILSMELII	MKALNWNLSNP	LTIVSWNLNIY	MQVAYLNELY
Lizard_CCNE1	AYVTDGACTE	EEILNMEELI	MKALDWHLSLSP	LTIVSWNLNIY	LQIAYLNEIY
Opossum_CCNE1	AYVTDGACTE	EEILTMELII	MKALKWRSLSP	MTLVSWNLVY	MQVAYLNDLY
Frog_cyce1	AFITDGAETE	DEITSMEELI	MKDLDWCLSLSP	MTVVSWFNVF	LQVAYIRELQ
Zebrafish_ccne1	AYVTDGACTE	DDILSMEELI	MKELNWSLSLSP	LTPVAWLNIY	MQMAYLKETA
Consistency	*99*****75	79*87**979	**7*6*4*9*	8*7*9*8*99	8*8**87864

	.....610.....620.....630.....640.....650				
Human_CCNE1	-EVLLPQYPQ	QIFIQIAELL	DLCVLDVDCCL	EFPGVILAAS	ALYHFSSEL
Macaca_CCNE1	-EVLLPQYPQ	QIFIQIAELL	DLCVLDVDCCL	EFPGVILAAS	ALYHFSSEL
Horse_CCNE1	-EVLLPQYPQ	QVFQIAELL	DLCVLDVGCL	EFPGVILAAS	ALYHFSSEL
Mouse_Ccne1	-EVLMPQYPQ	QVFVQIAELL	DLCVLDVGCL	EFPGVILAAS	ALYHFSSEL
Platypus_CCNE1	-EVLVPRYPQ	QIFVQITELL	DLCVLDVGCL	EFPGVILAAS	ALYHFSSEL
Chicken_CCNE1	-EVLLPQYPQ	QIFVQIAELL	DLCVLDIGCL	EYTYGVLAAS	ALYHFSSEL
Lizard_CCNE1	-EMLLPHPYPQ	QIFVQIAMLL	DLCVLDIGCL	GYTYSVLAAS	ALYHFSSEL
Opossum_CCNE1	E-EVLMPQYPQ	QIFVQIAELL	DVCILDMGCF	DFTYGVLAAS	ALYHFSSTEI
Frog_cyce1	-HFLLPQFPQ	EVYIQIVQLL	DLCVLDICCL	EYPYGVLAAS	ALYHFSCEP
Zebrafish_ccne1	-EVLTAQYPQ	ATFVQIAELL	DLCILDVRS	EFYSYSLAAS	ALFHFSSEL
Consistency	087*7879**	8899*987**	*9*9**8488	785*88****	**9***84*9

	.....660.....670.....680.....690.....700				
Human_CCNE1	MQKVSGYQWC	DIENCVKWMV	PFAMVIRETG	SSKLKHFRGV	ADEDAHNIQT
Macaca_CCNE1	TQKVSGYQWC	DIENCVKWMV	PFAMVIRETG	SSKLKHFRGV	ADEDAHNIQT
Horse_CCNE1	MQRVSGYQWC	DIEKCVKWMV	PFAMVIRETG	SSKLKHFRGV	PAEDAHNIQT
Mouse_Ccne1	MQKVSGYQWC	DIEKCVKWMV	PFAMVIREMG	SSKLKHFRGV	PMEDSHNIQT
Platypus_CCNE1	MRKVSGYEWR	DVEECVKWMV	PFAMVIREAG	SSKLKRFRGV	PTEDLHNIQT
Chicken_CCNE1	MQKVSGYEW	EIEECVKWMV	PFAMVIREVG	SSKLKHFRGV	APEDLHNIQT
Lizard_CCNE1	MQRVSGYEFS	DIEDCVKWMV	PFAMVIREVG	STTMKQFRGV	PAEDLHNIQT
Opossum_CCNE1	MKKVSGFDWP	EVEECVKWMV	PFAMVIREVG	GARLKYFKGV	PSMEDHNIQT
Frog_cyce1	VEKVSGFKLT	ELQGCIKWLV	PFAMAIKDG	KSKLKFVKGV	DIEDVHNIQM
Zebrafish_ccne1	VIKVSGLKWC	DLEECVRWMV	PFAMSIREAG	SSALKTFKGI	AADDHNIQT
Consistency	768***7674	8895*99*9*	***969895*	7879*4*8*9	539*5****8

	.....710.....720.....730.....740.....				
Human_CCNE1	HRDSLDDLK	ARAKKAMLSE	QNRASPLPSG	LLTPPQSGKK	QSSGPEMA
Macaca_CCNE1	HRDSLDDLK	ARAKKAMLSE	QNRASPLPSG	LLTPPQSSKK	QSSEPEMA
Horse_CCNE1	HLNSLDDLK	AQAKKAILSE	QNRISPPTG	VLTPPQSSKK	QSSGQGTV
Mouse_Ccne1	HTNSLDDLK	AQAKKAILSE	QNRISPPTSV	VLTPPQSSKK	QSSEQETE
Platypus_CCNE1	HVNSLDDLK	AQAKQAILAE	HNRTSPLPTG	VLTPPQSSKK	QTTERKAV
Chicken_CCNE1	HINSLDDLK	AQAKQAILAE	QNRISPPTG	VLTPPQSSKK	QPAGLKPI
Lizard_CCNE1	HINTFDLLK	VESKQASLAE	KSRHSPPLPG	ILTPPQSSKK	LPQL----
Opossum_CCNE1	HVNTINLLDR	AYEKQAILAD	E-KVSA-PSG	VLTPPQSDKK	PSKEQE--
Frog_cyce1	ETGCLELMEK	VHINRALLEE	QNRASPIPSG	VLTPPQSNKK	QKSDPAD-
Zebrafish_ccne1	HVPYLEWLK	VHSYQLVDIE	SSQRSVPPTG	VLTPPQSSSEK	PESTIS--
Consistency	*556878978	7567786869	6684*83*68	8*****7*79*	65643411

CCNA1

Unconserved 0 1 2 3 4 5 6 7 8 9 10 Conserved

	10	20	30	40	50
Human_CCNA1	METGFPAIMY	PGSFIGGWGE	EYLS--WE--	GPGLP-----	DFVFQQQPV
Macaca_CCNA1	METRFPVAMY	PGSFIGGWGD	EYLC--WE--	RQGLP-----	DFNFQQQRV
Opossum_CCNA1	MNRDQRRR	----VPSWFG	HHLSGRWEEG	RRAVPIRCPR	KGRDLHVWPG
Mouse_Ccna1	-----	-----	-----	-----	-----
Horse_CCNA1	-----	-----	-----	-----	-----
Platypus_CCNA1	-----	-----	-----	-----	-----
Lizard_CCNA1	-----	-----	-----	-----	MLQSSIA
Chicken_CCNA1	-----	-----	-----	-----	-----
Frog_ccna1	-----	-----	-----	-----	MRRS
Zebrafish_ccna1	-----	-----	-----	-----	-----
Consistency	000000000	000000000	000000000	000000000	000000000

	60	70	80	90	100
Human_CCNA1	ESEAMHCSNP	KSGVVLATVA	RGPDACQILT	RAP-LGQDPP	-QRTVLGLLT
Macaca_CCNA1	ESEAMHCSNP	KNGVVLATVA	RGPDACQILT	RAP-LGQDPP	-QRTVLGLLT
Opossum_CCNA1	ETeAMRRSIS	KGRIP LAPAA	RSQEICQVVA	RAQ-PIPDPP	-QRTVLGLLT
Mouse_Ccna1	----MHRQSS	KSGVALPPVG	QGPDACQMLS	RAQ-LGQDPP	-QRTVLGVLT
Horse_CCNA1	----MHCSSS	KSGVVLAPVS	RGPDACQMIT	RAH-LGQDPP	-QRTVLGVLT
Platypus_CCNA1	----MRRSGS	RGRTPQTPVA	RPQEIQVAA	RLR-PGQATR	-QRTILGLLS
Lizard_CCNA1	VPENMDPSGK	DKE--KEQVG	RWDNLSEM-A	EPH-AHQNA	-QRAVLREIS
Chicken_CCNA1	-----	-----MR	RTGETSQAGR	REP-LPAAAPR	GGRTVLGVLT
Frog_ccna1	MVSGGHILTA	SSLVGTGNAF	QNQCLAKVEV	QSN-LLPPRV	SQRTVLGVIS
Zebrafish_ccna1	-----MSS	RS---FAPLS	SRQE--NILG	RAEGLRQLKP	GQRIVLGVLT
Consistency	1011432534	5423144465	7345447634	8540536455	08*79*8697

	110	120	130	140	150
Human_CCNA1	ANGQYRRTC	GGITRIRCYS	GSENAFPFAG	KKALPDCGVQ	EPPKQGFDIY
Macaca_CCNA1	ENGQYRRTC	GGITRIRCYS	GSENAFPFAG	KKALPDCGVQ	EPPKQGFDIY
Opossum_CCNA1	ENGQYRRTC	GGITTRIRCF	GSENVFPFAG	KKLISNCMVH	VPAKQGFDIY
Mouse_Ccna1	ENEQYRRTC	QEITAIRCF	GSENVFPFAG	KKVLSDHGVN	EPAKRGFDIY
Horse_CCNA1	ENGQYRRTC	QGITTLCRFS	GSENVFPSTG	KKLLSDCGVH	VPAKQGFDIY
Platypus_CCNA1	ENGQYRKAYG	QCITTRIRCF	GSENVCPFAG	KKSRSNVCVH	LPTKQGFSIY
Lizard_CCNA1	ENGQCRRPCV	QGMTIVKHLS	GAENVFPAAR	ESVLSVC---	LPSKQDFDVIY
Chicken_CCNA1	ENGQHRLGV-	QNTAITRHLS	GSENAFPFAG	KDEVSNVCVVS	TTSKQDFAIY
Frog_ccna1	DNDQQRKSVG	QGGAPAKCLP	GIENVLPFAG	KILPTNPALV	AP-KPIFTVIY
Zebrafish_ccna1	ENEQHNRIFG	Q-----VAS	KYETTLQEV	KRDVST---	-----FRAS
Consistency	8*6*587556	*446356558	86*8668487	9545654252	363864*588

	160	170	180	190	200
Human_CCNA1	MDELEQGD	SCS--VREGM	AFEDVYEVD	GTLKSDLHFL	LDNFNT----
Macaca_CCNA1	MDELEQGD	SCS--GREGM	AFEDVYEVD	STLKSDLHFL	LDNFNT----
Opossum_CCNA1	VDEPEHGER	SCSCTVREG	AYEDVYEVD	STLKSDLHFL	LDNFST----
Mouse_Ccna1	MDDPEQGD	TCS--GKEGI	IFEDVYEVD	SMLKSDLHFL	LDNFNT----
Horse_CCNA1	MDEPEQGD	SCT--EREGM	AFEDVYEVD	STLKSDLHFL	LDNFST----
Platypus_CCNA1	IDKPERGER	GCGCTVGEQ	EYGDVREAES	KAAPDLHFL	LDNFSTGNIC
Lizard_CCNA1	VDDVE--ERS	WCSYMAVEE	E-PTMCEIDS	SALKPNIHLL	LTLLSTG----
Chicken_CCNA1	IDPEEKENY	SCQ--EDEEL	E-SSLCELD	SAMTSSIHL	LDLLSTG----
Frog_ccna1	VDEPEE-PTE	TYS--IEEDC	E--PTLDEV	NIVKQNIHLL	LDLDA-----
Zebrafish_ccna1	IGDS-----	-----VIETA	TVQSV-KSTS	FLLPSEL-LV	LDDAVQDI--
Consistency	7874843543	4650043*45	4356739677	5577668879	*857800000

	210	220	230	240	250
Human_CCNA1	-----	VSP MLVDSSLLSQ	SEDISSLGTD	VINVTEYAAE	-----
Macaca_CCNA1	-----	VSP MLVDSSLLSQ	SEISSLGTD	VINVTEYAAE	-----
Opossum_CCNA1	-----	VSP MLVDTSLSQ	FEDHLDIGTD	VINVTEYAAE	-----
Mouse_Ccna1	-----	VSP MLVDPTTHAQ	SEEATDFGSD	VINVTEYAAE	-----
Horse_CCNA1	-----	VSP MLVDSSLLHSQ	SEDASDFGTD	VINVTEYAAE	-----

Platypus_CCNA1	PQGIQLKLCS	RRHRSTE	ASP	MVVD	TSLSQSQ	LEDRLDTGPN	VINVPEYAAEE
Lizard_CCNA1	-----	-----	SP	MSVDRSL	QQQ	NEELRDSNMD	VMNFVEYEED
Chicken_CCNA1	-----	-----	SP	MLVDTSFRSR	PEDQMGDPIT	LMTVGEYAED	
Frog_ccna1	-----	-----	ASP	MVVD	TSLSQAS	PEDDSITDPD	AVAVSEYIDE
Zebrafish_ccna1	-----	-----	GSG	SFMDSSMHSL	ADEEAASSED	VLCVSEYAED	
Consistency	0000000000	00000000	3*8	869*	597476	4983443547	86685**798

	260	270	280	290	300
Human_CCNA1	IYQYLREAEI	RHRPKAHYMK	KQPDITEGMR	TILVDWLVEV	GEEYKLRAET
Macaca_CCNA1	IYQYLREAEI	RHRPKAHYMK	KQPDITEGMR	MILVDWLVEV	GEEYKLRAET
Opossum_CCNA1	IHQYLREAEI	KYRPKAHYMR	KQPDITEGMR	TILVDWLVEV	GEEYKLRAET
Mouse_Ccna1	IHRYLREAEV	RHRPKAHYMR	KQPDITEGMR	AILVDWLVEV	GEEYKLRTET
Horse_CCNA1	IHQYLREAEI	KYRPKAHYMR	KQPDITEGMR	TILVDWLVEV	GEEYKLRAET
Platypus_CCNA1	IHRYLRGVEM	KHRPKAHYMQ	KQPDITEAMR	TILVDWLVEV	GEEYKLRAET
Lizard_CCNA1	IHCYLRGAEV	KYKPKPCYMR	KQPDITSGMR	AILVDWLVEV	GEEYKLQDET
Chicken_CCNA1	IHQYLREAEV	KYRPKPYMR	KQPDITTEMR	AILVDWLVEV	GEEYKLRTET
Frog_ccna1	IHQYLREAEI	KHRPKAYMR	KQPDITSAMR	TILVDWLTEV	GEEYKLRTET
Zebrafish_ccna1	IHRYLRECEV	KYRPKPGYMR	KQPDITNCMR	VILVDWLVEV	GEEYKLCSET
Consistency	*86***77*7	879**65**8	*****65**	6*****8**	*****76**

	310	320	330	340	350
Human_CCNA1	LYLAVNFLDR	FLSCMSVLRG	KLQLVGTAAM	LLASKYEEIY	PPEVDEFVYI
Macaca_CCNA1	LYLAVNFLDR	FLSCMSVLRG	KLQLVGTAAI	LLASKYEEIY	PPEVDEFVYI
Opossum_CCNA1	LYLAVNFLDR	FLSCMSVLRG	KLQLVGTAAI	LLASKYEEIY	PPEVDEFVYI
Mouse_Ccna1	LYLAVNFLDR	FLSCMSVLRG	KLQLVGTAAI	LLASKYEEIY	PPDVDEFVYI
Horse_CCNA1	LYLAVNFLDR	FLSCMSVLRG	KLQLVGTAAI	LLASKYEEIY	PPEVDEFVYI
Platypus_CCNA1	LYLAINYLDR	FLSCMSVLRG	KLQLVGTAAI	LLASKYEEIY	PPEVDEFVYI
Lizard_CCNA1	LYLAVNYLDR	FLSCMSVLRG	KLQLVGTAAM	LVAAKYEEVY	PPEVDEFVYI
Chicken_CCNA1	LYLAVNYLDR	FLSCMSVLRG	KLQLVGTAAI	LLAAKYEEIY	PPEVDEFVYI
Frog_ccna1	LYLAVNYLDR	FLSCMSVLRG	KLQLVGTAAI	LLASKYEEIY	PPDVDEFVYI
Zebrafish_ccna1	LYLAVNYLDR	FLSCMSVLRG	KLQLVGTAAI	LLAAKYEEVY	PPEVDEFVYI
Consistency	****9*8**	*****	*****8	*9*8****9*	**8*****

	360	370	380	390	400
Human_CCNA1	TDDTYTKRQL	LKMEHLLLKV	LAFDLTVPTT	NQFLLQYLRR	QGVCVVRTENL
Macaca_CCNA1	TDDTYTKRQL	LKMEHLLLKV	LAFDLTVPTT	NQFLLQYLRR	QGVCVVRTENL
Opossum_CCNA1	TDDTYTKRQL	LRMEHLLLKV	LAFDLTVPTT	NQFLLQYLQK	QGVCLRTENL
Mouse_Ccna1	TDDTYTKRQL	LRMEHLLLKV	LAFDLTVPTT	NQFLLQYLRR	QGVCIPTENL
Horse_CCNA1	TDDTYTKRQL	LRMEHLLLKV	LAFDLTVPTT	NQFLLQYLRR	QGVCLRTENL
Platypus_CCNA1	TDDTYTKRQL	LRMEHLLLKV	LAFDLAVPTT	NQFLLQYLQR	QGVCLRTENL
Lizard_CCNA1	TDDTYSKKQL	LRMEHLLLKV	LAFDLTVPTI	NQFLLQYLQR	HGVSLKTENF
Chicken_CCNA1	TDDTYTKRQL	LRMEHLLLKV	LAFDLTVPTI	NQFLLQYIHR	HGVCFRPTENL
Frog_ccna1	TDDTYSKKQL	LRMEHLLLKV	LAFDLTVPTI	SQFLLQYLQR	RAVSVKTEHL
Zebrafish_ccna1	TDDTYTKKQL	LRMEQHLLRV	LAFDMTAPT	HQFLMQYSLE	EHVCARTLNL
Consistency	*****8*8**	*8**88**9*	****989**6	8***9**858	67*768*888

	410	420	430	440	450
Human_CCNA1	AKYVAELSLL	EADPFLKYLP	SLIAAAAFCL	ANYTVNKHFW	PETLAAFTGY
Macaca_CCNA1	AKYVAELSLL	EADPFLKYLP	SLIAAAAFCL	ANYTVNKHFW	PETLAAFTGY
Opossum_CCNA1	AKYVAELSLL	EADPFLKYVP	SLIAAAAYCL	ANYTVNRHFW	PETLAAFTGY
Mouse_Ccna1	AKYVAELSLL	EADPFLKYLP	SLVAAAAYCL	ANYIVNRHFW	PETLAAFTGY
Horse_CCNA1	AKYVAELSLL	EADPFLKYLP	SLIAAAAYCL	ANYTVNRHFW	PETLAAFTGY
Platypus_CCNA1	AKYVAELSLL	ETDPFLKYVP	SLIAAAAYCL	ANYIVNQNF	PETLAAFTGY
Lizard_CCNA1	AKYVAELSLL	EADPFLKYLP	SQMAAAAYCL	ANYTVNRHFW	PEALAAFTGY
Chicken_CCNA1	ARYLAELSLL	EADPFLKYLP	SQMAAAAYCL	ANYTVNRHFW	PETLAAFTGY
Frog_ccna1	AMYLAEELSLL	DVEPFLKYVP	SITAAAYCL	ANYALNKVFW	PETLETFTGY
Zebrafish_ccna1	ALYLSELSLL	EVDPFVQYLP	SKTAAAYCL	ANYTLNGALW	PENLYAFTGY
Consistency	*6*89*****	969**99*8*	*56*****8**	***68*658*	**7*78****

	460	470	480	490	500
Human_CCNA1	SLSEIVPCLS	ELHKAYLDIP	HRPQQAIREK	YKASKYLCVS	LMEPPAVLILL
Macaca_CCNA1	SLSEIVPCLS	ELHKAYLDIP	HRPQQAIREK	YKASKYLRVS	LMEPPSVLILL
Opossum_CCNA1	SLSEIVPCLS	ELHRACLDIP	HRPQQAIREK	YKASKYLHVS	LMEPPAVLPL
Mouse_Ccna1	SLNEIVPCLS	ELHKACLSIP	HRPQQAIREK	YKASKYLHVS	LMEPPVVLPL
Horse_CCNA1	SLSEIVPCLS	ELHKACLDIT	HRPQQAIREK	YKASKYMHVS	LLEPPAVLPL
Platypus_CCNA1	SLREIGPCLN	ELHRACLDVP	HRLQQAIREK	YKAPKYMVS	LMEPPVFLPL

Lizard_CCNA1	S	I	S	E	I	V	P	C	L	S	D	L	H	R	A	C	L	E	A	P	H	W	Q	Q	A	I	R	E	K	Y	K	L	A	K	Y	L	E	V	S	L	L	E	P	P	L	I	L	P	L	
Chicken_CCNA1	S	I	S	E	I	V	P	C	L	T	D	L	H	K	T	C	L	D	A	P	H	C	Q	L	Q	A	I	K	E	K	Y	K	Q	S	K	Y	L	Q	V	S	L	L	E	P	P	A	V	L	P	L
Frog_ccna1	T	L	S	E	I	T	P	C	L	S	D	L	H	Q	A	S	L	R	A	P	F	Q	A	Q	Q	A	I	R	E	K	Y	K	T	P	K	Y	M	Q	V	S	L	L	E	M	P	A	V	L	P	L
Zebrafish_ccna1	S	L	A	V	I	G	P	C	L	K	E	L	H	K	L	H	L	G	A	G	S	R	P	Q	Q	A	I	Q	E	K	Y	K	S	S	K	Y	H	G	V	S	Q	L	E	P	V	E	T	L	P	L
Consistency	9	*	7	8	*	6	*	*	*	7	8	*	*	7	7	4	*	5	6	7	7	5	5	8	*	*	*	8	*	*	*	*	6	6	*	*	7	4	*	*	8	8	*	8	5	7	*	6	*	

	.
Human_CCNA1	Q
Macaca_CCNA1	Q
Opossum_CCNA1	K
Mouse_Ccna1	Q
Horse_CCNA1	Q
Platypus_CCNA1	Q
Lizard_CCNA1	Q
Chicken_CCNA1	H
Frog_ccna1	N
Zebrafish_ccna1	P
Consistency	5

CCND2

Unconserved 0 1 2 3 4 5 6 7 8 9 10 Conserved

	10	20	30	40	50			
Human_CCND2	MELLCH	EVDP	VRRAVRDRNL	LRDDRVLQNL	LTIEERYLPQ	CSYFKCVQKD		
Macaca_CCND2	MELLCC	EVDP	VRRAVRDRNL	LQDDRVLQNL	LTIEERYLPQ	CSYFKCVQKD		
Horse_CCND2	MELLCC	EVDP	VRRAVPDANL	LYDDRVLQNL	LTIEERYLPQ	CSYFKCVQKD		
Mouse_Ccnd2	MELLCC	EVDP	VRRAVPDRNL	L-EDRVLQNL	LTIEERYLPQ	CSYFKCVQKD		
Opossum_CCND2	MELLCC	EVDP	IRRAVPDP	SLFDDRVL	LNL	LTIEERYLPQ	CSYFKCVQKD	
Chicken_CCND2	MELLCC	EVDP	MRRALPDP	PNL	LYDDRVLHNL	LTIEERYLPQ	CSYFKCVQKD	
Frog_ccnd2	MELLCC	EGDT	VRRAQADPTL	LLDDRVLHNL	LTVEERYLPQ	CSYFKCVQKD		
Platypus_CCND2	MELLCC	EAEF	VRRALPDP	PNL	LNDDRVL	LNL	LTIEERYLPQ	CSYFKCVQKD
Zebrafish_ccnd2	MELLCL	EMDT	IRARPD	PNL	LYDDRVL	QSL	LTIEERFLPQ	CSYFKCVQKD
Consistency	*****6*	697	88**55*	57*	*29*****59*	**9***9***	*****9*	

	60	70	80	90	100
Human_CCND2	IQPYMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAG	VPTPKSHLQL
Macaca_CCND2	IQPYMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAG	VPTPKSHLQL
Horse_CCND2	IQPYMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAG	VPTPKTHLQL
Mouse_Ccnd2	IQPYMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAG	VPTPKTHLQL
Opossum_CCND2	IQPYMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAG	VPTPKCRLQL
Chicken_CCND2	IQPFMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAV	VPTRKCHLQL
Frog_ccnd2	IQPFMRRMVA	TWMLEVCEEQ	RCEEEVFPLA	MNYLDRFLAV	IPTRKCHLQL
Platypus_CCND2	IQPHMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAG	VPTPKHHHLQL
Zebrafish_ccnd2	IQPFMRRMVA	TWMLEVCEEQ	KCEEEVFPLA	MNYLDRFLAV	VPTRKCNLQL
Consistency	***7*****	*****	9*****	*****5	9**6*47***

	110	120	130	140	150
Human_CCND2	LGAVCMFLAS	KLKETSPLTA	EKLCIYTDNS	IKPQELLEWE	LVVLGKGLKWN
Macaca_CCND2	LGAVCMFLAS	KLKETSPLTA	EKLCIYTDNS	IKPQELLEWE	LVVLGKGLKWN
Horse_CCND2	LGAVCMFLAS	KLKETIPLTA	EKLCIYTDNS	IKPQELLEWE	LVVLGKGLKWN
Mouse_Ccnd2	LGAVCMFLAS	KLKETIPLTA	EKLCIYTDNS	VKPQELLEWE	LVVLGKGLKWN
Opossum_CCND2	LGAVCMFLAS	KLKETIPLTA	EKLCIYTDNS	VKPQELLEWE	LVVLGKGLKWN
Chicken_CCND2	LGAVCMFLAS	KLKETIPLTA	EKLCIYTDNS	IKPQELLEWE	LVVLGKGLKWN
Frog_ccnd2	LGAVCMFLAS	KLKETIPLTA	EKLCIYTDNS	IKPQELLEWE	LVVLGKGLKWN
Platypus_CCND2	LGAVCMFLAS	KLKETAPLTA	EKLCIYTDNS	IKPRELLEWE	LVVLGKGLKWN
Zebrafish_ccnd2	LGAVCMFLAS	KLKETRPLTA	EKLCIYTDNS	IRPQELLEWE	LVVLGKGLKWN
Consistency	*****	*****5****	*****	99*9*****	*****

	160	170	180	190	200
Human_CCND2	LAAVTPHDFI	EHILRKLPQQ	REKLSLIRKH	AQTFIALCAT	DFKFAMYPPS
Macaca_CCND2	LAAVTPHDFI	EHILRKLPQQ	REKLSVVRKH	AQTFIALCAT	DFKFAMYPPS
Horse_CCND2	LAAVTPHDFI	EHILRKLPQP	NDKLPLIRKH	AQTFIALCAT	DFKFAMYPPS
Mouse_Ccnd2	LAAVTPHDFI	EHILRKLPQQ	KEKLSLIRKH	AQTFIALCAT	DFKFAMYPPS
Opossum_CCND2	LAAVTPHDFI	EHILRKLP	KDKLLLIRKH	AQTFIALCAT	DFNFAMYPPS
Chicken_CCND2	LAAVTPHDFI	EHILRKLP	KDKLVLIRKH	AQTFIALCAT	DFNFAMYPPS
Frog_ccnd2	LAAVTPHDFI	EHILRKLP	KEKLLLIRKH	AQTFIALCAT	DFNFAMYPPS
Platypus_CCND2	LAAVTPHDFI	EHILRKLCQP	RDKLLLIRKH	AQTFIALCAT	DFTFAMYPPS
Zebrafish_ccnd2	LAAVTPNDFI	EHIMRKLP	EDKLELIRKH	VQTFIALCAT	DFNFAMYPPS
Consistency	*****8***	***9***756	67**499***	8*****	**6*****

	210	220	230	240	250
Human_CCND2	MIATGSVGAA	ICGLQQDEEV	SSLTCDALTE	LLAKITNTDV	DCLKACQEQI
Macaca_CCND2	MIATGSVGAA	ICGLQQDEEV	SSLTCDALTE	LLAKITNTDV	DCLKACQEQI
Horse_CCND2	MIATGSVGAA	ICGLQQDEEDV	SSLTGDALVD	LLAKITNTDV	DCLKACQEQI
Mouse_Ccnd2	MIATGSVGAA	ICGLQQDDEV	NLTCDALTE	LLAKITHTDV	DCLKACQEQI
Opossum_CCND2	MIATGSVGAA	ICGLQLDSED	NSLS-EHLTE	LLAKITNTDV	DCLKACQEQI
Chicken_CCND2	MIATGSVGAA	ICGLQLDDGD	RSLSGDSLTD	FLAKITSTDV	DCLKACQEQI
Frog_ccnd2	MIATGSVGAA	ICGLQLDDGE	TSLSGDSLTE	HLAKITSTDV	DCLKACQEQI
Platypus_CCND2	MIATGSVGAA	ICGLQLDVEE	SALSGDGLTD	LLAKITNTDV	DCLKACQEQI
Zebrafish_ccnd2	MIATGSVAAA	ICGLQLNSTN	HSLWGDNLTE	LLAKITNTEV	DVLKACQEQI
Consistency	*****8**	*****58554	5886395*88	6*****7*9*	*8*****

	260										270										280										290																	
Human_CCND2	E	A	V	L	L	N	S	L	-	-	-	-	Q	Q	Y	R	Q	D	-	-	Q	R	D	-	G	S	K	S	E	D	E	L	D	Q	A	S	T	P	T	D	V	R	D	I	D	L		
Macaca_CCND2	E	A	V	L	L	N	S	L	-	-	-	-	Q	Q	Y	R	Q	D	-	-	Q	R	D	-	G	S	K	S	E	D	E	L	D	Q	A	S	T	P	T	D	V	R	D	I	D	L		
Horse_CCND2	E	V	V	L	L	N	S	L	-	-	-	-	Q	Q	F	R	Q	D	-	-	Q	G	D	-	G	S	K	S	E	D	E	L	D	Q	A	S	T	P	T	D	V	R	D	I	D	L		
Mouse_Ccnd2	E	A	L	L	L	N	S	L	-	-	-	-	Q	Q	F	R	Q	E	-	-	Q	H	N	A	G	S	K	S	V	E	D	P	D	Q	A	T	T	P	T	D	V	R	D	V	D	L		
Opossum_CCND2	E	A	V	L	V	N	N	L	-	-	-	-	R	Q	V	R	Q	E	E	-	Q	Q	R	N	P	T	K	T	V	D	E	L	D	Q	A	S	T	P	T	D	V	R	D	I	N	L		
Chicken_CCND2	E	S	V	L	V	S	N	L	-	-	-	-	R	Q	V	R	Q	Q	-	Q	Q	S	N	P	S	K	T	I	E	E	L	D	Q	A	S	T	P	T	D	V	R	D	I	N	L			
Frog_ccnd2	E	S	V	L	V	S	S	L	-	-	-	-	R	Q	T	R	Q	Q	A	-	T	G	S	N	-	S	K	S	V	N	E	L	D	Q	A	S	T	P	T	D	V	Q	D	I	N	L		
Platypus_CCND2	E	A	V	L	V	H	N	L	-	-	-	-	R	R	V	Q	Q	R	E	P	P	P	S	Q	P	S	K	M	V	D	E	V	D	Q	A	G	T	P	T	D	V	R	D	I	N	L		
Zebrafish_ccnd2	E	R	V	L	M	N	N	L	R	E	G	R	R	Q	Q	K	Q	Q	Q	Q	E	Q	G	G	Q	R	S	K	A	L	D	D	Q	D	Q	S	S	T	P	T	D	V	R	D	I	N	L	
Consistency	*	6	9	*	7	7	7	*	0	0	0	0	0	0	0	7	9	4	8	*	6	1	0	7	3	5	2	3	9	*	6	5	7	8	5	*	*	9	7	*	*	*	*	9	*	9	7	*