

Supplementary file 3.

Sequence alignment of Nile Tilapia (Oni) Cpt 1s with Cpt / CPT sequences from Makobe island cichlid (Pny), fugu (Tru), zebrafish (Dre), Mexican tetra (Ame), coelacanth (Lch), human (Hsa), chicken (Gga), little skate (Ler), elephant shark (Cmi), midas cichlid (Aci), three-spined stickleback (Gac), tetraodon (Tni), grass carp (Cid), medaka (Ola), peregrine falcon (Fpe), anola lizard (Aca), mouse (Mmu), and pig (Ssc) (Aca). Dots represent amino acid identity and dashes represent gaps. The percentage identity and similarity between Nile tilapia Cpt 1s and other fish species and human Cpt 1s / CPT 1 is shown at the end of each sequence.

Ti Cpt 1α1a

Oni Cpt 1α1a	1	MAEAHQAVAFQFTVTPEGIDLHLSHEALRQVYLSGIHSWKKRFVRFKNGIMTGVYPGSPA
Pny Cpt 1α1a	1	.....
Tru Cpt 1α1a	1	S.D....Q.C.....I....L.....I....V.....G
Dre Cpt 1α1a	1	D.....C.....I.....I....V.....S
Ame Cpt 1α1a	1	D....Q.C.....L.N...K.....V.....T
Lch CPT 1α	1	D....R.....I....L....K.I.....I....A..S
Hsa CPT 1α	1	D....R.....I....L....K.I.....I....A..S
Gga CPT 1α	1	D....RM....K.I....V....K.I.....I....A..S
Ler CPT 1α	1	D....Q.....K.....LR.....R.Y....L....A..S
Oni Cpt 1α2a	1	D....Q...Q...TEI...MR....I..V..SVI....A..S
Cmi CPT 1C	1	Q...Q...KEI...VRA....CA.IR.N.V....A..S
Oni Cpt 1α1a	61	GFSIVVGSYMAYNKFKQLDPSLGLFTKLGHIPISRYMSTDSQKIVGGILVGTSLWVTII
Pny Cpt 1α1a	61	M.....R.....
Tru Cpt 1α1a	61	..M.....S...YN....M.FVV....Y.....L...T.R...V....G.....
Dre Cpt 1α1a	61	.LVV.LVG..SST.YAKI....IL...ST.L.V.K.ITE.G.R...V....G..IAVT
Ame Cpt 1α1a	61	.LLV..SG..S.A.YTKM...F.IVA..AT....K.ITE.G.R.A..V.....
Lch CPT 1α	61	SWLF..VGVVS-TMYTRV....MIARIS.RL.VTTHL.SQ..N..S.V.F..G...ALF
Hsa CPT 1α	61	SWL...VGV.T-TMYAKI....IIA.INRTLETANC..SQTKNV.S.V.F..G...AL.
Gga CPT 1α	61	SWL...VGV.S-TMYAKI....IIA.INRTLDTTG...NQT.N..S...F..G...AL.
Ler CPT 1α	61	SWLF..VAVI..-TMYARV....MIE.IRC.L.TNG.L.NQ.ES.LS.L.FS.G..IALV
Oni Cpt 1α2a	61	SWLF..IAIL.-TMYTRS...M..IA.IQE.L.V.QS...QC.AV.SAV.FS.M..LML.
Cmi CPT 1C	61	SWLF.ALTVVG-TMYTRV...M.MIG.IKE.L.VK.CL.HQG.N.MSAL.FA.V..LAL.
Oni Cpt 1α1a	121	MIMRTVLKSLLSWHGWMQERHGSLSWSSRIWMVLVKVFSGRKPMLYSFQNSLPRLPVPSI
Pny Cpt 1α1a	121	E.....
Tru Cpt 1α1a	121	...N.....Y....I..T..A..L.....AV
Dre Cpt 1α1a	121	FV..NA..Y.....FNQ..T..LKTK..L...L...P.....S.....PV
Ame Cpt 1α1a	121	FV..N.....YN...TV.IGTKM.L...L.....Y.S...N....V
Lch CPT 1α	120	FT..YS..M...Y....FIE..KVPFGT...IR...L..VC.....T.....AV
Hsa CPT 1α	120	VT..YS..V...Y....FTE..KM.RATK...GM..I.....T.....AV
Gga CPT 1α	120	VT..YS..M...Y....FAE..K..AGTKL..T...L.....T.....AV
Ler CPT 1α	120	FT..QT..L...Y....FVP..KTPT.VKL..LI..I.....LT....T.....TV
Oni Cpt 1α2a	120	FT..LC..Q...Y.R..F.Q..KM.TTTK..VA..RI.....L...Y.G...N...T.
Cmi CPT 1C	120	YM..QI..T...Y....F.E..KA.NMT...FTM..I.....A.....T.
Oni Cpt 1α1a	181	KDTCERYLESVRPLMDDQQFERMKGLTQDFEKNLGPRLQWYLKLKSWWASNYVSDWWEY
Pny Cpt 1α1a	181	...K.....
Tru Cpt 1α1a	181	S...R.....H....EER....TA.AK.....
Dre Cpt 1α1a	181	...VR.....A.....E.YK..E..AK.....K.....T.....
Ame Cpt 1α1a	181	.S.VK....A.A...EDYK..E..AK.....V.....T.....
Lch CPT 1α	180	...MT.....E..R..TK.AK...LK..R.....T.....
Hsa CPT 1α	180	...VN...Q.....KEED.K..TA.A...AVG.....T.....
Gga CPT 1α	180	...VN.....N.EE.K..E..AK..AF.....T.....
Ler CPT 1α	180	...MRK.....LN.KE.Q..QA.AK...LKV.....T.....
Oni Cpt 1α2a	180	...VK.....KEY...TK.AAE..SS..N.....AL.....

Cmi CPT 1C	180	Q..MQ.....N.EE.H..EA.AK...VK.....T.....
Oni Cpt 1α1a	241	IYLRGRGPIMVNSNYAMDFLYVFPTSIQAARAGNAIHSIMLYRRKLDRAQIKPLMLLH-
Pny Cpt 1α1a	241	V.....-
Tru Cpt 1α1a	241	S.....A.....IY..AN
Dre Cpt 1α1a	241	S.....N...L.....S..AM.M.....Y..EN
Ame Cpt 1α1a	241	V.....HL.....A.....VY..EN
Lch CPT 1α	240	L...T..PL.....T..A.L.....EE....IQN-
Hsa CPT 1α	240	L.....L..IL..H.....A.L.....EE...IR..GS
Gga CPT 1α	240	F.....HLS..T.....I..A.L...K...QE...IL.MGS
Ler CPT 1α	240	Y..IV..PV.....T..AML.....EE.H.--.MG
Oni Cpt 1α2a	240	V.....G.....T..P.....S...FF.....NKEEL..-W..RS
Cmi CPT 1C	240	V.....E.....T..P.....LT.ALL.....T.EE...ST.PGL
Oni Cpt 1α1a	300	TIPMCSAQYERMFNTTRVPGVETDTLQHVNESKHIVVYHKGRYFKVWMFYDGRLLLLPREI
Pny Cpt 1α1a	300	H.....
Tru Cpt 1α1a	301	KV.L...W.....TI.T.....F...V.....
Dre Cpt 1α1a	301	RV.L...W.....C.I..L..V.....A.....FY.....
Ame Cpt 1α1a	301	KV.L...W.....S.I.....VI.....F.....F....
Lch CPT 1α	299	S.....S.I.....MRD.....LYH....K....
Hsa CPT 1α	300	..L...W.....S.I..E...I..MRD.....R.....LYH....K...M
Gga CPT 1α	300	.V.L...W.....S.I..E.S...KD.....LYH....K....
Ler CPT 1α	297	Q....S.....SS.I..L...M..LKD...V.....LYHS....S.C..
Oni Cpt 1α2a	299	AV.C..Y.F...D.C.I..IL...V..WQD.DY.....RLRVYQA...S....
Cmi CPT 1C	300	PV.L..S.W.....S..T..Q..GKTA.LSG-.LLLL.AT.ERVN..LEEK---.QAWRK
Oni Cpt 1α1a	360	EQQMERILADKSEPLPGEERLAALTAGDRTPWAKARESFFSRGKNKQSLDAVEKAAFFLT
Pny Cpt 1α1a	360	M.....
Tru Cpt 1α1a	361	Q.....N..DTY.....I.....V.
Dre Cpt 1α1a	361	Q...F.....V.....SQ..I.....V.
Ame Cpt 1α1a	361	T...Q...MT.....E.V.....TE...K...HA..S.....V.
Lch CPT 1α	359	...Q...D.D.K.Q...K.....V.....TTY.C...L.....V.
Hsa CPT 1α	360	...Q...DNT...Q...A.....V...RC.QAY.G.....V.
Gga CPT 1α	360	..IQ...D.D...QA...K.....V.....QAY.....V.
Ler CPT 1α	357	QL..QK..D.Q.L.QT...K.....V.....Q.Y..Q.R..L..E.I.....V.
Oni Cpt 1α2a	359	.F.IQ...D.P.P.SK..AK.G.....I.....TKY..S.V..R..CI.....V.
Cmi CPT 1C	356	RVGWVVLWFPP.V.HQDSTHTSPRGG.G.I..G...K...N...RS...C.....
Oni Cpt 1α1a	420	LDDTEQRYDTKNPVKSLDIYAKSLHKGICYDR-----WFDKSLNMIVYKNGTMGLNAEHS
Pny Cpt 1α1a	420	A.....F.....
Tru Cpt 1α1a	421	C...N...T...S.....F.L..F.....
Dre Cpt 1α1a	421	...S...EPD..IQ...S.G.....L..F.....
Ame Cpt 1α1a	421	P...Q...S.....F.L..F.....T
Lch CPT 1α	419	GFRKED..T...R.....SFV.F...K...S...
Hsa CPT 1α	420	..E..EG.RSED.DT.M.S.....R.....FTFV.F...K.....
Gga CPT 1α	420	..D..G.SKED..S...A.....I..R.....TFTLV.F...K.....
Ler CPT 1α	417	GFRKEE.IS...N.....SF..IF...KI.....
Oni Cpt 1α2a	419	..E..GMMGDD.AA..R.....FTVVY...KN.I.....
Cmi CPT 1C	416	..GDKPGLQVED.....A...L.....QVAVG.....FTL..FE..KV.....
Oni Cpt 1α1a	475	WADAPIVGHLWEHVLSMDP-KLGYTEDGHCVGKPHPNLPGPQRLQWTIPAECQEAISSL
Pny Cpt 1α1a	475	T.....
Tru Cpt 1α1a	476	NN....E...R.V.....K...D.....QV.QN..
Dre Cpt 1α1a	476	Q...S..VR....E...K.N...M.....D..E...TV.S...
Ame Cpt 1α1a	476	Q..AF..VT...A...K..T.S.....D..E...SV.A...
Lch CPT 1α	474	Y..AT.SFQ....E...K.E.K.SI.F...R.E.E...V..I..
Hsa CPT 1α	475	A...Y.M.I.SLQ..A....K.DIN..I.Y.T...D..G...V..T..
Gga CPT 1α	475	N.MATEYLE...L....K.DTNQ.I.I.TK...E..E...DV.R...
Ler CPT 1α	472	I.....Y..AT.QFQ...DE.N.K.E.N.QIQP...D.EEP...V.HQ..
Oni Cpt 1α2a	474	VLA.V..YT.AN.SFQ...NAE...K.DVD.S..R.VK.S.E..P..E.Q.AQ..
Cmi CPT 1C	476	I.....Y..AT.SFQ...NDQ...K.DAESTVLS.....D..EA...V.SG..

Oni Cpt 1α1a	534	TVARALADDVDCHIIPFTDFGKGLIKKCRTPDAFIQIALQLAHYRDKGKFCCLTYEASMT
Pny Cpt 1α1a	534	...K.....
Tru Cpt 1α1a	536	...QN.....S.....SE.....K.....
Dre Cpt 1α1a	536	K..NT.....M..F..N.....K....G...L.....F.....
Ame Cpt 1α1a	536	K..N.....S.....S.....K.....L.....F.....
Lch CPT 1α	534	K..K.....F.SF..DS.....L.....W....Y.....
Hsa CPT 1α	535	NT.NL..N...F.SF..VA...I.....V.L.....K.M.....
Gga CPT 1α	535	ST.....FYSFY.DV.....AK.....L.....M...S.....
Ler CPT 1α	532	S..QQ.....F.SF..DK...V...WI....V.M.....
Oni Cpt 1α2a	534	A..Q.....F.VFS.QE...KV...V...G...M....YF.ER.T.....
Cmi CPT 1C	536	K..QS..N...F.TF...K.....L.....NF.....S...
Oni Cpt 1α1a	594	RMFREGRTETVRSCTIETCAFVRAMVG-DETREERLRLLKLAAEKHQONLYRLAMTGQGID
Pny Cpt 1α1a	594	M...T.....-
Tru Cpt 1α1a	596	.L.....M.S....S.IR-...T.....K.....M.....E...
Dre Cpt 1α1a	596	.L.....N.....H..MDEKA.....K...A.T.....K....K...
Ame Cpt 1α1a	596	.L.K.....VQS.D....MDEKQ.....V..D...D...M...K...
Lch CPT 1α	594	.L.....V.S.N..LS..DPKQ.N.Q..K.F.I.S....M.....A...
Hsa CPT 1α	595	.L.....T.S.D.....DPAQ.V.Q..K.F...S....HM.....S...
Gga CPT 1α	595	.L.....S.N..QT.ENPS.SN.NKMKSFRT...H.....A...
Ler CPT 1α	592	.L.....SQSTQ..L..NSSQ.N..K.K.FR...D...SM..H....E...
Oni Cpt 1α2a	594	.L.....N.SS..I..LE.-G.ATDVCKC.FR.V.S....L.....A...
Cmi CPT 1C	596	.L.....QSSN.....ED-HLSAS.C.K.FH...KT..HIS..S.A.C...
Oni Cpt 1α1a	653	RHLFCLYVVSKYLGEDSPFLKEVLSEPWKLSTSQTPLOQVELFDLVRHPEYVSSGGGFGP
Pny Cpt 1α1a	653	.....
Tru Cpt 1α1a	655	E.A.....R.....V.....K.....
Dre Cpt 1α1a	656	L.....R.....M....KK....T.....
Ame Cpt 1α1a	656	R..V.....R.....D..N.AKN...T.....
Lch CPT 1α	654	V.....R.....Q.....NNK.....
Hsa CPT 1α	655	AVE.....R.....Q.....ENN.....
Gga CPT 1α	655	SV.....R.....Q.--HI..KKN..ML.....
Ler CPT 1α	652	M.....V..MN.H.P---K.....
Oni Cpt 1α2a	653	VE.....R.....I.....IEN.....C.....
Cmi CPT 1C	655	VH....Q.....S.....LN....I.C.....
Oni Cpt 1α1a	713	VADDGYGVSYIILGENHINFHISSKRSSPETDSHRFGTNIRQAMLDILGLFELNNKAAK-
Pny Cpt 1α1a	713	I.....H.....-
Tru Cpt 1α1a	715	V...L.....K...V.M.N..Q.EK..K--
Dre Cpt 1α1a	716	DL.....H..H.....S..K.....D..Q.DI.PN.K
Ame Cpt 1α1a	716	L.....H.....QH.Q...R...S..Q.DK..T.L
Lch CPT 1α	714	LV...L..L.V...L..L.....KH....Q...A..N....SS.-
Hsa CPT 1α	715	LV...L.....F.C.....RHLKE..T..IT..G.SSNSK.-
Gga CPT 1α	712	D..S.H..V...F.CS.....K..QK.LV..M...OPTKNCT.-
Ler CPT 1α	708	MV...L..M....F.....NYFQ.....A..D.DKRTS.-
Oni Cpt 1α2a	713	CV...M.....C.H.C.D..A.K...Q....LR.L.K.LSP.QTEPSK
Cmi CPT 1C	715	.S.K-----K.Q-----

		Identity (%)	Similarity (%)
Oni Cpt 1α1a	771	----- 100	100
Pny Cpt 1α1a	771	----- 98	99
Tru Cpt 1α1a	772	----- 85	95
Dre Cpt 1α1a	775	----- 79	89
Ame Cpt 1α1a	776	I----- 78	89
Lch CPT 1α	772	----- 74	86
Hsa CPT 1α	773	----- 71	84
Gga CPT 1α	770	----- 70	84
Ler CPT 1α	766	----- 69	84
Oni Cpt 1α2a	773	TEESQPKV 63	77
Cmi CPT 1C	721	----- 58	70

Ti Cpt 1a2a

Oni Cpt 1a2a	1	MAEAHQAVAFQFTVTPDGIDLQLSHQALTEIYLSGMRSWKKRIVRVKNSVITGVYPASPS
Pny Cpt 1a2a	1	I.....
Aci Cpt 1a2a	1	V.....I.....
Ame Cpt 1a2a	1	I..E.....E..RQV...L.....L..N.....
Cid Cpt 1a2b	1	IS..E..N.H..Y...NQ...L.....S..I..RI..K.....
Dre Cpt 1a2a	1	I..E.....RQV...L.....VT..L.....
Ola Cpt 1a2b	1	I..E.....Y...NQ...V.....VS..MR..R..K.....
Lch CPT 1C	1	E...K...E..KQVF...Q.....LA..L...F...M.....
Oni Cpt 1a1a	1	E...H...E..RQV...IH....F..F..GIM....G..A
Oni Cpt 1β	1	G.....R...V..FK..QEVKN....VTA...KAIQF..G..LA.....
Oni Cpt 1a2b	1	I..E.....Y...NQ...V.....VS..R..L..K.....
Oni Cpt 1a2a	61	SWLFVVIAILAT-MYTRSDPSMGLIAKIQEHLVPSQ--SMSTQCQAVVSAVLfstmlwlm
Pny Cpt 1a2a	61	--.....
Aci Cpt 1a2a	61	--.....
Ame Cpt 1a2a	61	A.G--...M...T.....L...S
Cid Cpt 1a2b	61	M..-..MQ.....R..RI..L..L--..L...G.TML..L...L...S
Dre Cpt 1a2a	61	-.....D--..L.V..RTM.....L..FS
Ola Cpt 1a2b	61	A.G....-I..MQ.....E..QR..L.LHV..L.A.G.TM...LV...L...S
Lch Cpt 1C	61	L...M..-L.A.V....M.D..K....KVQ-EFYQTARTKTNPTQITDKRINL
Oni Cpt 1a1a	61	GFSI..GSYM.YNKFKQL...L..FT.LGQ.I.I.R--Y...DS.KI.GGI.VG.S..VT
Oni Cpt 1β	61	...I...MMSS-L.IHI...L.MMDA.K.N..YRD--C..V.TR..L..I..A.G...F
Oni Cpt 1a2b	61	A.G....-..MQ.....T...Q...L.LHM..L...G.TM...LV...L...S
Oni Cpt 1a2a	118	LIFTMRLCLKQLLSYHRWMFEQHGKMSTTTKIWVALVRIFSGRKPLLYSYQGSIPNLPVP
Pny Cpt 1a2a	118	.....
Aci Cpt 1a2a	118	.....
Ame Cpt 1a2a	118	K.....NV.....V..M.....Q.....
Cid Cpt 1a2b	118	..LAL.F...L.....CI..K..V.AT...LL.....T...H....
Dre Cpt 1a2a	118	G.....V.N.....A.M.....Q.....
Ola Cpt 1a2b	120	..LAL.F...L....Q.....RV.N...V..T.L.LL.....T...H....
Lch Cpt 1C	119	.CTNLYQ.G-IYSEILLX...NRV.L....IT..K.....M....AC..R....
Oni Cpt 1a1a	119	I.MI..TV..S...W.G..Q.R..SL.WSSR..MV..KV.....M...F.N...R....
Oni Cpt 1β	118	..YLL.YT..A....G.I..S.....S..V.LC..KM....R....F.A...R....
Oni Cpt 1a2b	120	..LAL.F...L....Q...K..RI.N...V..P...LL.S.....S...H....
Oni Cpt 1a2a	178	TIKDTVKRYLESVRPLMDDKEYERMTKLAAEFESSLGNRLQWYLKLKALWASNYVSDWWE
Pny Cpt 1a2a	178	.....
Aci Cpt 1a2a	178	D.....
Ame Cpt 1a2a	178	A.....KS.S.F...N..K...D...S.....
Cid Cpt 1a2b	178	P...LEK....K..H.SAGFQ..KR.T...K.....R.....T.....
Dre Cpt 1a2a	178	AV.....N.S.....E..R.....
Ola Cpt 1a2b	180	AVR..LT.....LT.P..K...D..N.....R.....T.....
Lch CPT 1C	178	P.AK.MQ.....H....EKFK...A..KD..VN.AP.....SW.....
Oni Cpt 1a1a	179	S...CE.....QQF...KG.TQD..KN..P.....SW.....
Oni Cpt 1β	178	SVD..IH.....L.NEQ.NK.EL..SD.KENKAAQ..RC.I..SW..T.....
Oni Cpt 1a2b	180	A.Q...S.....LT.L.FK...D..N...N.....R.....T.....
Oni Cpt 1a2a	238	EYVYLGRGPIMVNSNYYGMDFLYVTPPTPIQAARAGNSIHSFFLYRRKLNKEELKPWLLR
Pny Cpt 1a2a	238	S.....SRIP
Aci Cpt 1a2a	238	N.....----
Ame Cpt 1a2a	238	..I.....TL.AVLM...R....I..SRIP
Cid Cpt 1a2b	238	S.S.....AN.....T.TAL.....V.R...N.SRIP
Dre Cpt 1a2a	238	I.....TL.ACL.....R..I..SRVP
Ola Cpt 1a2b	240	..I.....SV.....T.TALL...MV.R...T.SRVP
Lch CPT 1C	238	..I.....I.AS..Y..T....A.YACLQ...VTR....L.IQ

Oni Cpt 1α1a	239	..I.....A.....F..S.....A...IM.....DRAQI..LM.L
Oni Cpt 1β	240	..I.....S.....F.I..L.....HR.....VV.AMLQ.....ERG..A.LRAL
Oni Cpt 1α2b	240	S.....SV.....T.TALL.....V.R.....SRVP
Oni Cpt 1α2a	297	-SAVPCCSYQFERMFDTCRIPGILTDTVQHWQD--SDYIVVYHKGRYFRLRVYQAGRLLS
Pny Cpt 1α2a	298	GTVI.L.AA.C..I.N.T...EE.....--.....R.....
Aci Cpt 1α2a	293	-----VN.....--.....A.....K.....
Ame Cpt 1α2a	298	GTFI.L.AA.C..I.N.T...EE...V....-E.VA...R.....WL....M..
Cid Cpt 1α2b	298	GTVI.L.AA.C....N.T.T.EE..VL.....-EFVA...R....K.W.....
Dre Cpt 1α2a	298	GLNI.L.AA.C..I.N.T...EE.GNI.YVASRLENEL.K.YIVTHPN.WAVLRVT.GI
Ola Cpt 1α2b	300	GTVI.L.AA.C....N.T.T.VE..VL.....-EFVA..SR...Y..W..R.....
Lch CPT 1C	297	-DCL.M..A.H.H..N.S....E...L..LT.--KH.....F..VW..HG..M.K
Oni Cpt 1α1a	299	HT-I.M..A.Y....N.T.V..VE...L..VNE--KH.....KVWMFYD....L
Oni Cpt 1β	298	GT-..M..T.M....N.T....E..F...LT.--RKHL..F....F.QVWL.TG..H.L
Oni Cpt 1α2b	300	GTVI.L.AA.C....N.T.T.VE..VL...L.--EFVA...R.....W..R.....
Oni Cpt 1α2a	355	PREIEFQIQIRILDDPSPPSKGEAKLGALTAG-DRIPWAKARTKYFSSGVNKRSLDCIEKA
Pny Cpt 1α2a	356	-..V.....I.....
Aci Cpt 1α2a	328	-.....R.
Ame Cpt 1α2a	356	Y.....AP..E....F....-.....KEF.....
Cid Cpt 1α2b	356	QY.....P..E.....-N.T...QV.KQF.....
Dre Cpt 1α2a	358	KTCMHYKYKYNVN.A.EKYI.KR.TCVFCTVFS....QT.KEF.G.....
Ola Cpt 1α2b	358	A...H...W.....LP..E.....-..V...QI.KEH.....I....
Lch CPT 1C	355	...L.I..EK..A.K.S.LP..EH.P.....-..V.....RD..Q..L.RQ...LV...
Oni Cpt 1α1a	356	Q.ME...A.K.E.LP..ER.A.....-T.....ESF..R.K..Q...AV...
Oni Cpt 1β	355	.S.L.T.F...N.T.E.QP..L..A.....-Y....Q..I...Q.I..V...A..S.
Oni Cpt 1α2b	358	Y.....ALP..E.....-.....QM.KQ.....A..R.
Oni Cpt 1α2a	414	AFFVTILDDEEQMMGDDPAASLDRIYAKSLHLHGKCYDRWFDKSFTVYVYKNGKNGINAEHS
Pny Cpt 1α2a	415	.....
Aci Cpt 1α2a	387	L.....S.....I.....M.V.....
Ame Cpt 1α2a	415	D.....NV.....S..IF.....L.....
Cid Cpt 1α2b	415	Q.E...E..SVN.....S..V.....L.....
Dre Cpt 1α2a	418	D.....GN.....L.....L.....
Ola Cpt 1α2b	417	A..K...TGN.....SI.I....S.L....
Lch CPT 1C	414	...S..ES...LKT...K..A..L.....L.VF...L.L....
Oni Cpt 1α1a	415	...L...T..RYDTKN.VK..I.....LNMIV...TM.L....
Oni Cpt 1β	414	...L....P..YDPAK-SN...S.....LIS.P...M.V.V...
Oni Cpt 1α2b	417	R....EGN..S.....S..I....S.L....
Oni Cpt 1α2a	474	WADAPVLAHVWEYTLANDSFQLGYNAEGHCKGDVDPSPVVKLSWEIPPECEEQIAQSL
Pny Cpt 1α2a	475	T.....L.....
Aci Cpt 1α2a	447	T.....S.....T...
Ame Cpt 1α2a	475	IVS.M...A..T.....E.....N...Q.QR.T.D..KQ.Q..V..C.
Cid Cpt 1α2b	475	IVS.L..F...T.T.H...TPD.N.R.E.ER..LP.QR...D..L.VQT.VSE..
Dre Cpt 1α2a	478	IM..L...VMTT.C.....E.....A.T..P.SR.T.D..AQ.Q.RVQR..
Ola Cpt 1α2b	477	TV..L.....T.A....TED....E..R...P.HR.....S.VQD..FS..
Lch Cpt 1C	474	IIG.L...V..T.T..I..KPD....EA.STILP.QR.Q.D..A..R.V.KM..
Oni Cpt 1α1a	475	IVG.L..HV.SM.P-K...TED...V.KPH.N..G.QR.Q.T..A..Q.A.ES..
Oni Cpt 1β	473	IVG.M...I..T.C.H...TE.....NKN..H.TR.Q.Q..N..QNV.ET.Y
Oni Cpt 1α2b	477	TV..L.....T.A....TED....E.E....Q.QR.V.N..A.VQA.VSS..
Oni Cpt 1α2a	534	AVAQALADDVDFHVFSFQEFGKGKVKKCRVSPDGFQMALQLAYFRERGTFLTYEASMT
Pny Cpt 1α2a	535	.....
Aci Cpt 1α2a	507	...R.....A.....F.....
Ame Cpt 1α2a	535	P....I....A.RD....SI..IKM.....L....FY.D..V.....
Cid Cpt 1α2b	535	C...P.R....CI..MKM...S.V.L.....Y.D.....
Dre Cpt 1α2a	538	L....PI.....AI...KI..A...I.....Y.N....S.....
Ola Cpt 1α2b	537	TL.K.....C...P.RD....I..L....A...IS.....D..S.....
Lch CPT 1C	534	...T..N.....T.KD...LI...T...A...I.....HY.DK.K.....
Oni Cpt 1α1a	534	T..R.....C.IIP.TD...LI...T...A...I.....HY.DK.K.....
Oni Cpt 1β	533	LS.KQI.....GYL.A....LI...T...A...L....Q..DQRV.....S...

Oni Cpt 1α2b	537	C...P.R.....RI....I...A...IS.....Y.D.SG.....
Oni Cpt 1α2a	594	RLFREGRTETVRSCITNESSAFIRALE-GGEATDVCKCLFRVASEKHQLLYRIAMTGAGID
Pny Cpt 1α2a	595	A.....H.....T.....
Aci Cpt 1α2a	567	T.....D-...A.A.R...A.A.....M.....
Ame Cpt 1α2a	595	SS..C...K.F.-N..DLE..RR.I.N.....M.....
Cid Cpt 1α2b	595	S...C..VLE..-A..DREH.RK...K.A...N.....S...
Dre Cpt 1α2a	598	S..C..V....-...SKE..RR...T.....Q...M...G...
Ola Cpt 1α2b	597	S.Q.C..VK...-...GA.Q..R...Q.....N...M.....
Lch CPT 1C	594	S..C..VK.MVDA.YTNAARLK..K..A...QM.....
Oni Cpt 1α1a	594	.M.....I.TC..V..MV-.D.TREERLR.LKL.A...N.....Q...
Oni Cpt 1β	593	.M..D.....S.AV..V..M.DA.ATNAQRLA...K.A...NM.....S...
Oni Cpt 1α2b	597	S...C...K...-S..TEEE.RR..QL.....N...M.....
Oni Cpt 1α2a	653	RHLFCLYVVSKYLGVESPFLEVLSEPWRLSTSQTPIQQVELFDIENHPEYVSCGGGFGP
Pny Cpt 1α2a	654	D.....
Aci Cpt 1α2a	626	LV.....
Ame Cpt 1α2a	654	I.....A.....F..L...FV...D.IT.....
Cid Cpt 1α2b	654	V..M...LV...FI.L.....
Dre Cpt 1α2a	657	I.....E.....DT.....L.....FV...D.TT.....
Ola Cpt 1α2b	656	D.....V..M...LK...DF..L.....
Lch CPT 1C	654	D...N.....A...LV.....
Oni Cpt 1α1a	653	ED.....K.....L.....LVR.....S.....
Oni Cpt 1β	653	I.....D...TK.....K.....Q..LN.V..NKF.K..GG.....
Oni Cpt 1α2b	656	V..MN...LK...DFI.L.....
Oni Cpt 1α2a	713	VADDGYGVSYCVLGENMINFHISCKHSCPDTDAHKGFTQIRQALRDLLKLLSPNQTEPSK
Pny Cpt 1α2a	714	D.....S...A..
Aci Cpt 1α2a	686	DR.....S...N.
Ame Cpt 1α2a	714	SLI..KI.S..V.S.....S.....K..H...Q.MTI..SDAAG
Cid Cpt 1α2b	714	IIM..E....V.....TE..S...F..S..ML..MS..N.DFK.AT.
Dre Cpt 1α2a	717	III.....Q.....AY.KK..V...E.M..DKQ.V..
Ola Cpt 1α2b	716	IIV..D....V.S...GE..S.R..A..AK..Q.IMAV..AD--TA.S
Lch Cpt 1C	714	IIV..DL.....G.I.GL...T.R..HH..K..L.I.S.FAVAKKN---
Oni Cpt 1α1a	713	II...H.....S.R.S.E..S.R...N...ML.I.G.FEL.NKAAK-
Oni Cpt 1β	713	IIV...L.T...S.F.S...SYR..QH..K.ML.IQA.FK.ENDKTAQ
Oni Cpt 1α2b	716	IIV..D.V...V.S.Y..SQ..S.R..I..SK.MQ.IMA...ADPKTS.S

		Identity (%)	Similarity (%)
Oni Cpt 1α2a	773 TEESQPKVK--KEQ-	100	100
Pny Cpt 1α2a	774 .....--D.-	96	97
Aci Cpt 1α2a	746 ....R.....-	92	94
Ame Cpt 1α2a	774 S.QNHSSKTQN.KEL	78	90
Cid Cpt 1α2b	774 SNPGKQS-----	72	86
Dre Cpt 1α2a	777 ..QNHS.NS--.K.L	74	85
Ola Cpt 1α2b	774 SKGPAQPQS--.KLL	72	78
Lch CPT 1C	770 -----	65	78
Oni Cpt 1α1a	771 -----	64	77
Oni Cpt 1β	773 NAKYVHLENGK.HI-	61	76
Oni Cpt 1α2b	776 SKGRGHPQT--.KLE	16	25

Ti Cpt 1a2b

Oni Cpt 1a2b	1	MAEAHQAVAFQFTITPEGIDLQLSYQALNQIYLSGVRSWKKRVSRVRNSLIKGVYPASPS
Pny Cpt 1a2b	1	.....
Ame Cpt 1a2b	1	D.V.....R...G..CH..L....N.F..MK.GVLR.....
Dre Cpt 1a2b	1	S.....N.H.....L.....I..IK.RI...A.....
Cid Cpt 1a2b	1	S.....N.H.....L.....I..IK.RI...A.....
Oni Cpt 1a2a	1	V..D.....H...TE.....M.....IV..K..V.T.....
Dre Cpt 1a2a	1	H...R.V...L.....T.LK..V.T.....
Ler CPT 1C	1	V.....RH..KE.....I....KCN.IK.NEFT.....
Tni Cpt 1a2a	1	G.E..VI...T.A...H...TE...A.H....CII.IK..V.....F
Oni Cpt 1a1a	1	V.....H..HE..R.V...IH....FV.FK.GIMT...G..A
Oni Cpt 1β	1	G...VR.D.V.FK..QEVKN.....TA...KAIQFK.GVLA.....
Oni Cpt 1a2b	61	SWLFVAIGILAT-MYMQSDPSMGLITKIQOHLPLSLHMSLSTQGQTMVSALVFSTLLWLS
Pny Cpt 1a2b	61	V.V.....-.....A.....
Ame Cpt 1a2b	61	V.V....-LHA.....A...D.....SLT..AN.....
Dre Cpt 1a2b	61	IV.A....-.....A...E.....S--..P....L...L.....M.
Cid Cpt 1a2b	61	V.A.M.-.....A..RERI....S--.....L...L.....
Oni Cpt 1a2a	61	V.A....-..TR.....A...E...V.QS--M...C.AV...VL...M...M
Dre Cpt 1a2a	61	V.A....-..TR.....A...E...V.DS--..V.CR....VL.....F.
Ler CPT 1C	61	..I..VLTVVG.-..TRV.....AMLRE.I..RRY--M.HH..S...ML.A.G...A
Tni Cpt 1a2a	61	V.A....-..TR.....A...EN..V.QS--....CKVLL..VI...M...L
Oni Cpt 1a1a	61	GFSI.VGSYM.YNKFK.L...L..F..LG..I.I.RY--M..DS.KI.GGILVG.S..VT
Oni Cpt 1β	61	...I.V.AMMSS-L.IHI...L.MMDA.KEN..YRDC--M.V.TRAVL..IL.A.G...F
Oni Cpt 1a2b	120	LILALRFCLKLLLSYHQWMFEKHGRISNTTKVWVPLVRLLSRKPPLYSYQSSLPPLPVP
Pny Cpt 1a2b	120	M.....
Ame Cpt 1a2b	120	V.S.....V.....R...Q.....I....T....F.....T.....
Dre Cpt 1a2b	118	..T.....R...Q..HM.TK...AT..K.....T.....
Cid Cpt 1a2b	118	R...Q..C..TK...AT.....G.....T.....
Oni Cpt 1a2a	118	..FTM.L...Q....R...Q..KM.T...I..A...IF.G.....G...N....
Dre Cpt 1a2a	118	..FTM.L...Q....G...Q..KV....I.AAM..IF.G.Q.....G...N....
Ler CPT 1C	118	..FVM.QI..T....G...E..KV.S....FT..KIF.G...M...F.N...R....
Tni Cpt 1a2a	118	..FTM.L...Q....R...P..KM.T....A...IF.G...R.....G...N....
Oni Cpt 1a1a	119	I.MIM.TV..S...W.G..Q.R..SL.WSSRI.MV..KVF.G...M...F.N...R....
Oni Cpt 1β	118	..YL..YT..A....G.I..S..KM.TS....LC..KMF.G.R....F.A...R....
Oni Cpt 1a2b	180	AIQDTVSRYLESVRPLLTDLEFKRMTDLANEFESNLGNRLQRYLKLKALWATNYVSDWWE
Pny Cpt 1a2b	180	P.....S.....
Ame Cpt 1a2b	180	P.K..LD.....I...RSPAD.E.VSR..A...S.....
Dre Cpt 1a2b	178	P.K..LE.....K...DLDG.Q..RR.TS...KS.....R.....
Cid Cpt 1a2b	178	P.K..LEK.....K...HDSAG.Q..KR.TA...KS.....
Oni Cpt 1a2a	178	T.K...K.....MD.K.YE...K..A...S.....W.....S.....
Dre Cpt 1a2a	178	.VK...K.....MN.S.YE...E..R...S.....W.....S.....
Ler CPT 1C	178	PV...LR.F.....MN.ED.R.TKA..KD..R..AP...W..I..SW..S.....
Tni Cpt 1a2a	178	.VK...K.....MD.AQYE.VAK..A...S.....W.....V.....
Oni Cpt 1a1a	179	S.K..CE.....MD.QQ.E..KG.TQD..K...P...W....SW..S.....
Oni Cpt 1β	178	SVD..IH.....DNEQYNK.EL..SD.KE.KAAQ...C.I..SW.....
Oni Cpt 1a2b	240	EYVYLRSRGPIMVNSNYYGMDFLYVTPTSVQAARAGNTITALLLYRRKVNREELKPSRVP
Pny Cpt 1a2b	240	.....
Ame Cpt 1a2b	240	..I...G.N.....Y.....AN.....I.
Dre Cpt 1a2b	238	S.....PN.....F.....N...I.
Cid Cpt 1a2b	238	S.....AN.....F.....N...I.
Oni Cpt 1a2a	238	G.....PI.....S.HSFF....L.K.....-WLL
Dre Cpt 1a2a	238	G....I.....PI.....LH.C....L...I.....
Ler CPT 1C	238	QG.E.....A.....TS.....LVH.....RLA..QVQ..TL.
Tni Cpt 1a2a	238	G.S.....V.....PI.....Y.M....S.L.K..I..VHLA

Oni Cpt 1α1a	239	..I...G.....A.....F...I.....A.HSIM.....LD.AQI..LMLL
Oni Cpt 1β	238	..I...G.S.....F.I..L.....HR.....VVH.M.Q....LE.G..A.L.AL
Oni Cpt 1α2b	300	GTVIPLCAAQCERMFNTTRTPGVETDVLQHWLD--SEFVAVYHRGRYFRLWVYRAGRLLS
Pny Cpt 1α2b	300	.....
Ame Cpt 1α2b	300	A..E.....E--..Y.....K..FY.....LT.....
Dre Cpt 1α2b	298	E.....Q--.....
Cid Cpt 1α2b	298	E.....Q--.....K...Q.....
Oni Cpt 1α2a	297	RSAV.C.SY.F...D.C.I..IL..TV...Q--..DYIV...K.....R..Q.....
Dre Cpt 1α2a	298	.LN.....I.....I..E..GNI.YVASRLENELVK.YIVTHPN..AVLRVT.GI
Ler CPT 1C	298	.FP...S..W....S..L..E...R...QA--..KH.M...K...KV.L.QS...Q.
Tni Cpt 1α2a	298	LSSL.C.SY.F.....C.I..TL..TVH..N--..CIV...K..F.Q.C..QE...C
Oni Cpt 1α1a	299	H.-..M.S..Y.....V.....T...VNE--..KHIV...K...KV.MFYD...L
Oni Cpt 1β	298	..-V.M.ST.M.....I..I...FV..LT--RKHLV.F.K..F.QV.L.TG..H.L
Oni Cpt 1α2b	358	PREIEYQIQIRILDDPSPALPGEEKLGALTAG-DRIPWAQMRKQYFSSGVNKRSLDAIERA
Pny Cpt 1α2b	358	D.....A..P.....-.....I....
Ame Cpt 1α2b	358	Q.....PQ.....-N....RI.....L..K.
Dre Cpt 1α2b	356	QF.....PS.....-N.T...RV...F.....Q...C..K.
Cid Cpt 1α2b	356	Q.....PS.....-N.T...V...F.....C..K.
Oni Cpt 1α2a	355	F.....PSK..A.....-.....KA.TK.....C..K.
Dre Cpt 1α2a	358	KTCMH.KYKYNVN.A.EKYI.KR.TCVFCTVFS.....T..EF.G.....C..K.
Ler CPT 1C	356	.S.LQK.F.Y....A.IPQ...KY.A.....-K....KV..S.....K..TAM.SV.K.
Tni Cpt 1α2a	356	F.....APSK..A.....-T...RA.AK.....K...C..K.
Oni Cpt 1α1a	356	Q.ME...A.K.EP....R.A.....-T...KA.ESF..R.K..Q...V.K.
Oni Cpt 1β	355	.S.L.T.F...N.T.EPQ...L..A.....-Y.....A.IK...Q..I..V.....S.
Oni Cpt 1α2b	417	AFFVTLDDEEQGMRGDDPEGNLDYSYAKSLLHGKCYDRWFDKSFVSVVIYKNGKSGLNAEHS
Pny Cpt 1α2b	417	.....
Ame Cpt 1α2b	417	E...E..A...R.....F...T.....
Dre Cpt 1α2b	415	QAE..K.EN.SE..R.....V...N.....
Cid Cpt 1α2b	415	Q.E..M.E..SV..R.....V...N.....
Oni Cpt 1α2a	414	M...AAS..R.....T..Y...N..I....
Dre Cpt 1α2a	418	D...M...A...R.....T..L...N.....
Ler CPT 1C	415	EDTPELFV.NQVKS..Q.....TFIVFA...V.....
Tni Cpt 1α2a	415	IM..NLRES..H..I.....N.....F.....G...
Oni Cpt 1α1a	415	...L...T..RYDTKN.VK..I.....LNMIV...TM.....
Oni Cpt 1β	414	...L....P..YDPAK-SNS.....TLIS.P...M.V.V...
Oni Cpt 1α2b	477	WADAPTV AHLWEYTLATDAFQLGYTEDGHCKGEVEPSLPQPQRLVWNIPAEVQAQVSSSL
Pny Cpt 1α2b	477	D.....
Ame Cpt 1α2b	477	F.....H...DTN.N....DC...P...T...S...V...D...
Dre Cpt 1α2b	475	I.....F.....T.H...NS..N.R.D.DH...H...S.D..F...T.I.E..
Cid Cpt 1α2b	475	I.S...F.....T.H...P..N.R...R..LP...S.D..L...T...E..
Oni Cpt 1α2a	474	VL..V.....N.S....NAE....D.D...R.VK.S.E..P.CEE.IAQ..
Dre Cpt 1α2a	478	IM.....VMT..C.....N.E....D.A.T..P.S..T.D...QC.ER.QR..
Ler CPT 1C	475	IIG....A...T....K...N...DPA.NV.L...Q.D..K.C.EVIM...
Tni Cpt 1α2a	475	.G...VLS.....EC....NAE.....DA...K..K.N.E..S.CEE.ICQ..
Oni Cpt 1α1a	475	I.G...HV.SM.P-K.....V.KPH.N..G...Q.T...C.EAIE...
Oni Cpt 1β	473	I.G.M...I....C.H....E....D.NKN..H.T..Q.Q..N.C.NVIET.Y
Oni Cpt 1α2b	537	AVAQALADDVDCHVFPPREFGKGRIKKCRISPDFAFIQISLQLAYYRDRSGFCLTYEASMT
Pny Cpt 1α2b	537	V.....G.....
Ame Cpt 1α2b	537	...R.....Q.....LK.....LA.....N.G.....
Dre Cpt 1α2b	535	E.....K...L...MKL...S.V.LA.....GT.....
Cid Cpt 1α2b	535	C...MKM...S.V.LA.....GT.....
Oni Cpt 1α2a	534	F...S.Q.....KV...V...G...MA.....F.E.GT.....
Dre Cpt 1α2a	538	L.F...IQ...A...K.....A.....N.GT.S.....
Ler CPT 1C	535	K...T..N...FYA...TR...V...T.....A...N...KGT.....S...
Tni Cpt 1α2a	535	.L....N...M..VV..D...AKV...VN.....A...H...QKR.S...SA..
Oni Cpt 1α1a	534	T..R.....II..TD...L...T.....A...H...KGK.....
Oni Cpt 1β	533	LS.KQI....F.GYL.A....L...T.....LA...QF..QRV.....S...

Oni Cpt 1α2b	597	RLFREGRTETVRSCSNESCAFIKALESG-ETEEECRRLFQLASEKHQONLYRMAMTGAGID
Pny Cpt 1α2b	597	T.....R.....
Ame Cpt 1α2b	597	D.....D.VL...N.-KGR...CK..RK.A.....L....S...
Dre Cpt 1α2b	595	VL...G.-.DR.Q..K.LRKTA.....L....S...
Cid Cpt 1α2b	595	VLE..A.-.DR.H..K..RK.A.....L....S...
Oni Cpt 1α2a	594	T...S...R...G.-.ATDV.KC..RV.....L...L.....
Dre Cpt 1α2a	598	TS.....VR...G.-.SK.V.....RT.....Q.....G...
Ler CPT 1C	595	TV.T.N.VT..DGKKHSN...LN..RI.AKN..HIS.L..S.C...
Tni Cpt 1α2a	595	T.....R...G.-..TDV.....RT.C....R.C...S....F.
Oni Cpt 1α1a	594	.M.....TI.T...VR.MVGD-..R..RL..LK..A.....L....Q...
Oni Cpt 1β	593	.M..D.....TS.AV..VR.M.DAGA.NAQRLA..RK.A....M..L....S...
Oni Cpt 1α2b	656	RHLFCLYVVSKYLGVESPFLEVLSEPWRLSTSQTPVQQMNLFDLKNHPDFISLGGGFGP
Pny Cpt 1α2b	656	.....
Ame Cpt 1α2b	656	D.....I..LE...V...E.V.....
Dre Cpt 1α2b	654	E...V...E.....
Cid Cpt 1α2b	654	E...V...E.....
Oni Cpt 1α2a	653	I..VE...IE...EYV.C.....
Dre Cpt 1α2a	657	I.....E.....DT.....L..VE...FV...YTTC.....
Ler CPT 1C	655	S...Q.....C.....I..IE...V...EY..I.....
Tni Cpt 1α2a	654	A.Q.AS.HV.H.MID...TV...EYLCY.....
Oni Cpt 1α1a	653	ED.....K.....L..VE...VR..EYV.S.....
Oni Cpt 1β	653	I.....D....TK.....K.....Q..L..V.INKF.KYVGG.....
Oni Cpt 1α2b	716	VADDGYGVSYIIVGEDMNVNFHVSSKYSQSDSHRFGIQISKAMQDIMALLSADPKTSSS
Pny Cpt 1α2b	716	V.....L.
Ame Cpt 1α2b	716	I.....H..KE...K..FE..H.LT.L.N...TGSSGPAP
Dre Cpt 1α2b	714	M...I....C.H..KE...K..C.V.Q..V.L.T..NP.FRDTTE
Cid Cpt 1α2b	714	M..E.I....C.H..TE...K..F...Q..L.L.S..NP.F.EATK
Oni Cpt 1α2a	713	CVL..N.I...I.C.H..PD..A.K..T..RQ.LR.LLK...PNQTEP.K
Dre Cpt 1α2a	717	I..N.I...I.C.H..P...A.K..AY.K..LV.LLE.M.P.KQEV.K
Ler CPT 1C	715	DHLLI...I.C.V.SPL..A....EN..Q..L..IT.FNL.G.KA--
Tni Cpt 1α2a	714	.T.G....C.LML.G.VLTL...C.N..PA-----
Oni Cpt 1α1a	713	L..NHI...I...R.SPE.....TN.RQ..L..LG.FELNN.AAK-
Oni Cpt 1β	713	NLIT..I...F.SPD...Y...QH.R...L..Q..FKPENDKTAQ

		Identity (%)	Similarity (%)
Oni Cpt 1α2b	776 SKGRGHPQTKKLE-	100	100
Pny Cpt 1α2b	776 ...T.Q..P...Q-	97	98
Ame Cpt 1α2b	776 E.--KQ.-----	80	89
Dre Cpt 1α2b	774 ANSDEQT-----	79	80
Cid Cpt 1α2b	774 .NPGKQS-----	80	89
Oni Cpt 1α2a	773 TEESQPKVK.EQ--	73	86
Dre Cpt 1α2a	777 TEQNHSKNS..QL-	70	82
Ler CPT 1C	772 -----	64	79
Tni Cpt 1α2a	744 -----	66	78
Oni Cpt 1α1a	771 -----	63	78
Oni Cpt 1β	773 NAKYV.LENG.KHI	60	76

Tilapia Cpt1β

Oni Cpt 1β	1	MAEAHQAVGFQFTVRPDGVDFKLSQEVIKNIYLSGVTAWKKKAIQFKNGVLGVYPASPS
Pny Cpt 1β	1	L.....T.....R.....
Gac Cpt 1β	1	A.....T.....I.LQ..R..L.H..I...S...R..R...S..T.....
Dre Cpt 1β	1	A.....T.....I.LQ..R..L.H..I...S...R..R...S..T.....
Cid Cpt 1β	1	A.....T.....I.LRM.H.AL.Q.....HS...F.R...IIT.....
Fpe Cpt 1α	1	A.....T.....I.LRM.H.AL.RQ.....LYS...F.R...IIT.....
Aca CPT 1α	1	A.....T.....R..R.AL.RH.....INS...RL.RI...I.R...G..T
Mmu CPT 1β	1	A.....T.E.I.LH..H.AL.RQV...IHS...RFVR...IMT...G..A
Oni Cpt 1α1a	1	A.....IT.E.I.LQ..YQALNQ.....RS...RVS.RV.R.SLIK.....
Oni Cpt 1α2b	1	A.....IT.E.I.LQ..YQALNQ.....RS...RVS.RV.R.SLIK.....
Ssc CPT 1C	1	RPPLTS..GEVE..PPLLQE.....LRS...RHLSR.W.DF.I..F...L
Oni Cpt 1β	61	SWLIVVIAMMS-SLYIHIDPSLGMMDAIKENLPYR--DCMSVQTRAVLSAILFATGLWLF
Pny Cpt 1β	61	-...L..L.....--.....
Gac Cpt 1β	61	-...R.....IE.LQ...H.--.YL...S.....
Dre Cpt 1β	61	...F....I..-TM.AR...M.TI.K..TS..VS--EF.T...QT.....S
Cid Cpt 1β	61	I..-TM.AR...M..I.R..TS..VS--EF.T...QM.....S
Fpe Cpt 1α	61	VG..-TM.AK.....IIAK.NRT.DTT--GY..N..QNIV.GV..G...VA
Aca CPT 1α	61	VG..-TM.AK.....LIAK.NRT.DIT--GY..N..QNIV.GV..G...VA
Mmu CPT 1β	61	...V..M.TVG-.N.CKV.I.M.LV.C.QRC..E.YGHFGTP..E.L..MVI.S..V.AT
Oni Cpt 1α1a	61	GFS...GSY.AYNKFKQL....LFTKLGQHI.IS--RY..TDSQKIVGG..VG.S..VT
Oni Cpt 1α2b	61	...F.A.GILA-TM.MQS...M.LITK.QQH..LSLHMSL.T.GQTMV..LV.S.L...S
Ssc CPT 1C	61	...FLFS.IQL-ACFLQL....L.EK...L..DWG--AQHHRL.GI.A.A...SC..GA
Oni Cpt 1β	118	LIYLLRYTLKALLSYHGWFESHGKMSTSTKVWLCLVKMFSGRRPLLYSFQASLPRLPVP
Pny Cpt 1β	118	M.....R.....S.....
Gac Cpt 1β	118	M.....R.....S.....
Dre Cpt 1β	118	V.F...L.....A.....Y.....S...LL.....G...H....
Cid Cpt 1β	118	F.F...I.....F.....S...LL.....H....
Fpe Cpt 1α	118	..VTM..S..M.....M.AE...L.AG..F.MA...L...K.M....T.....
Aca CPT 1α	118	..FSM....M.....M.AE...L..G..I.MT...L...K.M....T.....
Mmu CPT 1β	120	G.FFF.Q...L.....M..M.S.T.HA..I.AIC.RLL.S...M....T...K....
Oni Cpt 1α1a	119	I.MIM.TV..S...W...MQ.R..SL.W.SRI.MV...V...K.M....N.....
Oni Cpt 1α2b	120	..LA..FC..L....Q.M..K..RI.NT...VP..RLL.S.K....Y.S...H....
Ssc CPT 1C	118	..FT.HVA.RL.....LL.T..V..SP..T..A..RI...H.M.F.Y.R...Q...
Oni Cpt 1β	178	SVDDTIHRYLESVRPLLDNEQYNKMELLASDFKENKAAQLQRCILKSWWATNYVSDWWE
Pny Cpt 1β	178	H...NSD..DQ..R..N...DS.....Y.....G.....
Gac Cpt 1β	178	H...NSD..DQ..R..N...DS.....Y.....G.....
Dre Cpt 1β	178	.I...R.....D...KQ..TV.N...KDP.PK..KH.K.....
Cid Cpt 1β	178	.I...S.....D...KQ..IV.N...KDP.PKF.KH.K.....
Fpe Cpt 1α	178	A.N..VN.....M.D.EFRR..G..K..AF.LGPR..WY.K.....
Aca CPT 1α	178	..KN.VN.....H..MNE..FKR..A.GK..AT.LGPK..WY.K.....A.....
Mmu CPT 1β	180	..PA.....D.....D.A.YR..T..KE.QDKT.PR..KY.V.....
Oni Cpt 1α1a	179	.IK..CE.....M.DQ.FER.KG.TQ..EK.LGPR..WY.K.....S.....
Oni Cpt 1α2b	180	AIQ..VS.....TDLEFKR.TD..NE.ES.LGNR...Y.K..AL.....
Ssc CPT 1C	178	A.Q..VRK.....V.CE.DFEWISA..RE.LKLQ.SL..WY.Q..Y...S.....
Oni Cpt 1β	238	EYIYLRGRSPIMVNSNFYIMDLLYVTPTHRQAARAGNVVHAMLQYRRKLERGELAPLRL
Pny Cpt 1β	238	I.....H.....
Gac Cpt 1β	238	I.....H.....
Dre Cpt 1β	238	D.....T.....I..Y.....T.....
Cid Cpt 1β	238	D.....T..F...I..Q.....T.....
Fpe Cpt 1α	238	G.....YFA..F..LS..TL.....I..I.L..K..D.Q.IK.ILLM
Aca CPT 1α	238	G.....YFA..F..F..SV.....AI..I.L....D.QQIQ.ILLM
Mmu CPT 1β	240	..V...S...L....Y.A..FVLIKN.NV...L..A...IM....D.E.IK.VM..
Oni Cpt 1α1a	239	G.....Y.A..F..F..SI.....AI.SIML....D.AQIK..ML..
Oni Cpt 1α2b	240	..V...S.G.....Y.G..F.....SV.....TIT.L.L...VN.E..K.S.VP
Ssc CPT 1C	238	.FV...S.NSL....Y.M..F.N....PV.....A...L.L..HR.N.Q.IF.TLLM

Oni Cpt 1β	297	-GTVPMCSTQMERMFNTTRIPGIETDFVQHLTDRKHLVVFHKGRFFQVWLYTGGRHLLPS
Pny Cpt 1β	297	-.....I.....I.....Y.....LL.....
Gac Cpt 1β	297	-.....I.....F.Y.....K.....Y.R..L.K...Y....W..
Dre Cpt 1β	297	-.....I.....F.Y.....K.....Y.R..L.K...Y....W..
Cid Cpt 1β	297	-.....I.....F.Y.....K.....Y.R..L.K...Y....W..
Fpe Cpt 1α	298	GS...L..A.W.....S...V.S.VL..VK.S..I..Y...Y.K...HD..L.K.R
Aca CPT 1α	298	GS...L..A.W.....S...E...TI..IK.S..I..Y...C.YK...YD..L.K.R
Mmu CPT 1β	299	-M.....Y.....K...LL...SESR.VA.Y.....K...E.S.L.K.R
Oni Cpt 1α1a	298	-H.I...A.Y.....V..V...TL..VNES..I..Y...Y.K..MFYD..L...R
Oni Cpt 1α2b	300	GTVI.L.AA.C.....T..V...VL..WL.SEFVA.Y.R..Y.RL.V.RA..L.S.R
Ssc CPT 1C	297	-MR.L..A.Y.KI.....VHR.HIH..R.SR.VA...R...R.GTHSQSGL.S.R

Oni Cpt 1β	357	ELETQFQRILNDTSEPQPGELKLAALTAGYRIPWAQARIKYFSQGINKVSLDAIESAAFF
Pny Cpt 1β	357	V.....
Gac Cpt 1β	357	H.V...S....G..V.....
Dre Cpt 1β	357	...L.....D.K.....PS...N.V...R..L...GE.V.RA..E...T...
Cid Cpt 1β	357	...L.....D.K.....PS...N.V...R..L...RE.V.RA..E...T...
Fpe Cpt 1α	358	I.Q.I.....D...A..E.....D.V...K..QA...R.K..Q...V.K...
Aca CPT 1α	358	I.Q.M.W..D.K.K....E.....D.V...K..QT..AR.K..Q.....K...
Mmu CPT 1β	359	D..M.....D.P.P....E.....G.VE..E..QTF..S.K..M.....R...
Oni Cpt 1α1a	358	I.Q.ME...A.K...L...ER.....D.T...K..ESF..R.K..Q...V.K...
Oni Cpt 1α2b	360	I.Y.I...D.P.PAL...E..G....D.....M.KQ...S.V..R.....R...
Ssc CPT 1C	357	A..Q.....D.P.PAC.H.EH.....AP.DM...V.KSLKT.A--EEA.E.V.G....

Oni Cpt 1β	417	LTLDDPEQGYDPAK-----SNSLDSYAKSLLHGKCYDRWFDKSFTLISYPNGKMGVN
Pny Cpt 1β	417	-----T.....
Gac Cpt 1β	417	-----AK.....V...
Dre Cpt 1β	417	AH....EN-----IR..L.....N..V.K.....
Cid Cpt 1β	417	AH....EN-----IR..L.....V.K..Q....
Fpe Cpt 1α	418	V....IE...RKDDP-----VK...A....I..R.....T...VFK..RI.L.
Aca CPT 1α	418	V....TA...REEDP-----VTTMET.....VFK.....L.
Mmu CPT 1β	419	V...EDSHC.N.DD-----ET..SL.G.A...N..N.....CK..LL.L.
Oni Cpt 1α1a	418	TE.R..TKNP-----VK...I.....LNM.V.K..T..L.
Oni Cpt 1α2b	420	V....E..MRGDDP-----EGN.....SVVI.K...S.L.
Ssc CPT 1C	415	VS..S..A.DAAGDTPEPSGDSAA...A..HA..A.RGH.....S..IFS...L.LS

Oni Cpt 1β	469	VEHSWADAPIVGHMWEYILATDCFHLGYTEEGHCKGDVNKNLPHPTRLQWQIPNECQNV
Pny Cpt 1β	469	.....
Gac Cpt 1β	469	A.....V.....G....S.....E..
Dre Cpt 1β	469	T.....S..I.....V.....A.....T.AP....D..KA..EI.
Cid Cpt 1β	469	T.....S..I.....A.....I..S.VP....D..KA..EI.
Fpe Cpt 1α	471	A.....L..NVM..EYLE...S.D.....I.Q.I.I..K...E..A...E..
Aca CPT 1α	471	T.....L..NVMFS..LE....D....ESSGILM.S...E..LE...E..
Mmu CPT 1β	471	T.....I..L..FV.G..T.....T..V.EP.TT..P.Q..P.D..EQ.REA.
Oni Cpt 1α1a	471	A.....L..HV.SM.-PK....D...V.KPHP...G.Q...T..A...EA.
Oni Cpt 1α2b	473	A.....T.A.L...T...A.Q....D....E.EPS..Q.Q..V.N..A.V.AQV
Ssc CPT 1C	475	...A...C..S.....FT...E..Q...SAD....HPDPS..Q.Q..H.DL.DKIHL.S.

Oni Cpt 1β	529	ETSYLSAKQIADDVDFHGYLFAEFGKGLIKKCRTPDAFIQLALQLAQFRDQRVFCLTYE
Pny Cpt 1β	529	.....
Gac Cpt 1β	529	L.....H.....C.....G.....
Dre Cpt 1β	529	G..RI..G.....C..N.....Y..KGE.....
Cid Cpt 1β	529	G..TI..G.....C..N.....Y..KGE.....
Fpe Cpt 1α	531	R.LST.IAL.....YSFF.DA.....AK.....V.....HY..MGK.S...
Aca CPT 1α	531	R.LAV.RPL.....SFP.DT....M..AK.....V.....HY..MGK.....
Mmu CPT 1β	531	N..QV..AL....ELYCFQ.LP.....V.I....H...KGK.....
Oni Cpt 1α1a	530	S.LTV.RAL....C.IIP.TD.....I....HY..KGK.....
Oni Cpt 1α2b	533	SS.LAV.QAL....C.VFP.R....R....I.....IS...YY..RSG.....
Ssc CPT 1C	535	SLALRG.QAL.ENI.C.VFP.SH...SF..R.HL.S.S...T.....H...RGR.....

Oni Cpt 1β	589	SSMTRMFRDGRGTETVRSCSEAVAFVRAMEDAGATNAQRLALFRKAAEKHQNMRYRLAMTG
Pny Cpt 1β	589	.....

Gac Cpt 1β	589	T.....E...K.....
Dre Cpt 1β	589	E.....C.ST.....DTT..E.....KQ.....
Cid Cpt 1β	589	E.....C.ST...K..D.ESIA.E...E..K.....
Fpe Cpt 1α	591	A...L..E.....V.SCN...T...PTESSENK.KF..I..A...HL.....
Aca CPT 1α	591	A...L..E.....TQSCK..K..D.PSE.LEKKI...KA..TH..LL.....
Mmu CPT 1β	591	A.....E.....N.SA...Q..MKGSHKKQDLQD.....S.....
Oni Cpt 1α1a	590	A.....E.....I.TC.....VG-DE.REE..R.LKL.....L.....
Oni Cpt 1α2b	593	A...L..E.....SN.SC..IK.L.S-.E.EEECR..QL.S....L..M....
Ssc CPT 1C	595	.A...L.LE.....R..CS.....HQEK.DP.C....L.VD...ALLKA..S..
Oni Cpt 1β	649	SGIDRHLFCLYIVSKYLGVDSPFLTKVLSEPWKLSTSQTPQQQLNLVDINKFPKYVGGGG
Pny Cpt 1β	649	C...
Gac Cpt 1β	649	L.....K.....R.....SA..
Dre Cpt 1β	649	A.....VM.I....KQ.....R.....I.TQ.....SA..
Cid Cpt 1β	649	A.....V...VM.I....KQ.....R.....I..Q.....A..
Fpe Cpt 1α	651	A.....V....A.....KE.....R.....HID.K---.N.EMLSC..
Aca CPT 1α	651	N.....V....A.E....KE.....R.....HID.N---.N.GMESS..
Mmu CPT 1β	651	A.....S....AE.....S.....I..F.ICMF.PKQY.NHL.A..
Oni Cpt 1α1a	649	Q.....V.....E....KE.....L..VE.F.LVRH.E..SS..
Oni Cpt 1α2b	652	A.....V.....E....KE.....R.....V..M..F.LKNH.DFISL..
Ssc CPT 1C	655	Q.V.....A.....QF.RLQ....DQ.H..Q.Q.A...I.V..MH.F..HNY.D..SS..
Oni Cpt 1β	709	GFGPVADDGYGVSYIIVGENLITFHISSKFSSPDTSYRFGQHIRKAMLDIQALFKPEND
Pny Cpt 1β	709	Q.....S...
Gac Cpt 1β	709	N.C.....CD.....
Dre Cpt 1β	709	E...F...N..Q..Q..R...NQKEK
Cid Cpt 1β	709	E...F...N..Q....R...NLKEK
Fpe Cpt 1α	708	LD..S.H..V...I.CSE...H...KN.Q...V..MG..NLSKN
Aca CPT 1α	708	D...N..V...Y.C.E.N.H...KN.KR.LC..RDM.GIGKN
Mmu CPT 1β	711	M.A...TMF.....Y..SE.NAQ...N...Q.L...AE...ISKT
Oni Cpt 1α1a	709	L...H.N.....R...E...H...TN..Q....LG..ELN.K
Oni Cpt 1α2b	712	DMVN..V...Y.CSQ...H...IQ.S...Q..M..LSADPK
Ssc CPT 1C	715	ADEH.....FT..DT.....K..TR...H.L.....D.L..VA...QEGQH

		Identity (%)	Similarity (%)
Oni Cpt 1β	769 KTAQNAKYVHLENGKKHI	100	100
Pny Cpt 1β	769	99	99
Gac Cpt 1β	769 ..TV---EQ.G....M	90	95
Dre Cpt 1β	769 .M-----	78	86
Cid Cpt 1β	769 .M-----	78	86
Fpe Cpt 1α	768 C.K-----	64	78
Aca CPT 1α	768 S.K-----	62	78
Mmu CPT 1β	771 DS-----	63	77
Oni Cpt 1α1a	769 AAK-----	62	76
Oni Cpt 1α2b	772 TSSSSKGRG.PQTK.LE-	59	76
Ssc CPT 1C	775 LKRRA-----	52	69