

AmexTERT	---MQRGNDFAGVLRLLRSVYPQ-----VCTLIQFM-----PTFPV---VH	35
hTERT	---MPRAPRCRAVRSLLRSHYRE-----VLPLATFV-----RRLG-----P	33
mTERT	---MTRAPRCPAVRSLLRSRYRE-----VWPLATFV-----RRLG-----P	33
TmtTERT	---MAGSGPFRAVLAMLEGCYAE-----VLGLEQFV-----QRLREAAACGP	39
PvTERT	---MGRPRRWRAVQGLLRSCYAE-----VLPLEAFV-----ERLQGQAQAE	39
xTERT	---MPLRTGGATLLSILQRLYGQ-----VLGIVEYT-----DTLQVP---GG	36
ZfTERT	MSGQYSTDGGFRPVLEILRSLYPV-----VQTLEEF-----DGLQFP---DG	40
OlaTERT	---MTSGDLSSVLNILRSLYKR-----TRTLEEFA-----DGVVFR---EG	35
TtTERT	-----	0
AtTERT	---MPRKPRHRVP-EILWRLFGNRARNLNDIAVDLIPNRNIQPEQCRCRGQGCLGCSSD	55
Sc_Est2p	-----	0
AmexTERT	GSATIQRSDDGEHYRTFVSQLLVCIPGEAWPPPHSAKIQQLSSQREVVARVIQRICEK-Q	94
hTERT	QGWRLVQRGDPAAFRALVAQCVCVPWDARPPPAAPSFQVSCLELVARVLQRLCER-G	92
mTERT	EGRRLVQPGDPKIYRTLVAQCVCVPMHWGSGQPPADLSFHQVSSLELVARVQRLCER-N	92
TmtTERT	GEAELLQRGDSELYQTFVSCVVCVPRGARAIQPLSFQQLSSESEVVIRVIQRLCEK-K	98
PvTERT	PLVPLVQEGDPACYRHLVERCLVGRAPGCKALPSRVVFQVSSLNDVVARVIQRICEK-K	98
xTERT	IKVPVLLEGDSEKFRSFVAELVVCIPRGTKPLSPVSVFLQLSTQREVVARVIQRICEK-K	95
ZfTERT	RKPVILLEETDGAREFKLLSGLIVCAYTPPQ-LR---VPAQLSTLPEVLAFTLNHIKRR-K	95
OlaTERT	RRAALLQPSDTHSEKSFVRGVFVCSDEELQDVP---SCNQCTCFPELLAFILNSLKRK-R	91
TtTERT	-----MQKINNINN	9
AtTERT	KPAFLLRSDDPHYRKLHRCFVVLHEQTPPL-LDFSPTSWWSQREIVERIIEMMQSGCD	114
Sc_Est2p	-----	0
AmexTERT	RSNVLAFGFALVDEN---SPM-PLTFAPNICNFLPNPTTATISTSVLWGTLLSRIGDDIM	150
hTERT	AKNVLAFGFALDGA---RGGPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGDDVL	149
mTERT	ERNVLAFGFELNEA---RGGPPMAFTSSVRSYLPNTVIETLRVSGAWMLLLSRVGDDLL	149
TmtTERT	KKNVLAFGYTLLEN---SSYSQVMSTSNICSYLPNTATETLRMSVLWETLLSRIGDDVM	155
PvTERT	KKNLLASGYSLNEN---NYQ--LSCMPNIYTYLPNNTTETIRQSILWEIILSRVGDDVM	153
xTERT	KKNVLAFGYGLVDEK---NSL-NIRLTPNICNYFPNPTTTTISTSVLWETLLTRVGDDVM	151
ZfTERT	LRNVLGFGYQCSQDVT---TSSDPFRFHGDV-----SQTAASISTSEVWKRINQRLGTEVT	147
OlaTERT	RNVLAHGYNFLGVAQEDRDADHERFQGDV-----SQSAAYIHSDDLWKKVTARLGTDTV	146
TtTERT	NKQMLTRKEDLLTVL---KQISALKYVS-----NLYEFLLAT-----	43
AtTERT	CQNVICARYDKYDQ-----SSPILELLTSSSWEFLLRKRVGHDM	153
Sc_Est2p	-----	0
AmexTERT	MYLLEHCSLFMLVPPTCCYQICGLPVYKLLN-NVCRSPAWSTRQIGSRQRGNILLMYIQKK	209
hTERT	VHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQARPPPHASG---PRRRLGCE-----	200
mTERT	VYLLAHCALYLLVPPSCAYQVCGSPYQICATTDIWPVSASYSR---PTRPVGRNFTNLR	206
TmtTERT	MYLLEHCAIFMLVPPSCSYQICGQPVYELTSSNAAPSAVFKQRYSKSRHNILFDYVRKK	215
PvTERT	MYLLEHCAIFMLVPPSCCYQMCQPIYELALRNATLSSAFFRQRYPGPTRSALSGLYQKR	213
xTERT	MYWLEQCSIFVFPVPPRCYQITGQPIYTLPSDDV-----FLFQSQSFTQSNVLLRYIKRN	206
ZfTERT	RYLLQDCAVFTTVPPSCVLQVCGEPVYDLLMPR-SWSGFFLSNSDNERISGAMRKFPVQ	206
OlaTERT	RYLLGSCSVFLAPPSCIFQICGVPAYDRVSMTTASSGFLLRPPSRKHKS-----	196
TtTERT	-----EK-----	45
AtTERT	VYLLQQTSTIFLPLLGKKHQVSGPPLCIKHKRTLSVH-----ENKRKR-----	196
Sc_Est2p	-----MKILFEFIQDK	11
AmexTERT	--FHQHKRYLEKATFWKAKRRLQANSSVFSVQRSSQTQHCT-GNCQNGKTQLVLVEPHPS	266
hTERT	---R-----AW-----NHSVREAG-----VPLGLPAPGAR--	222
mTERT	-FLQQ-----IK-----SSSRQEAP-----KPLALPSRGTK--	231
TmtTERT	--FQLSKTN-----RWKWKPRSEINILNTKSQRNKTQGSV-PDYEHSATAKGAVGQN--	265
PvTERT	--LKSCGKF-----LATANRKKGNRSRSQSRKIQKGLECDCLSPMGYEVHGLKPA	262
xTERT	-VFHLRKKYLKPKHSM-----TSRMLTW--RRNK-----SPSGLLIRS---	241
ZfTERT	KTVAISKK-----RTRDN-----EKYIS-----	224
OlaTERT	--FQVGKK-----RRSANLTRGSGVDVEES-----	220
TtTERT	-----	45
AtTERT	-----DDNVQPPTKRQWLSSAV-----DD---CPKDDSATITPIVGEDV-	232
Sc_Est2p	LDID-----LQTNST-----	21
AmexTERT	PGKSHAMQQHVTDNHL-----KRKST--LRPATTHENEDEAGVPAKMRMRDFIGTQA	316
hTERT	---RRG---GSASRSLPLPKRPRRGAAPEPERTPVG-----QG	254
mTERT	---RHL---SLTSTSVPSAKKARCYPVPRVEEGPHR-----QV	263
TmtTERT	-SKTNKQV-RMATGHLENRRGNLYPVAT--TTPSKRKLDRDQFEVTAKRMIKINLREED	321
PvTERT	KSKPFAGM-SICRESV--QRSDQC--TSL--TAPLLKRKWTGQCGTSAKRVKIMQTEEEL	315
xTERT	--KT--SM-AVTT-EI-----HSKRKLCSKDICIPIPKRRRDNLDKDDT	279
ZfTERT	-VKRRRVKETVNNNN--GNYRSLCFAI-----SKKRAIDNEENISLKRMRMEETDQVA	274
OlaTERT	-RKRRRVESGVA-----RKRKREPEEEESRERRRGVHHE---	254
TtTERT	-----IVQTSEL-----DTQFQEFLLTTTIIA--SEQN	70
AtTERT	-----DQHREKKTTKRSRIYLKRRRKQRKVNFK	260
Sc_Est2p	-----	21

AmexTERT	Q---SFCSLVNKSVPN-LKTICDR-----CGWKSMDLATPTEIQAVKPDVG	359
hTERT	SWA-----HPG-RT---RG-----PSDRGFCV-VSPARPA-----E--	280
mTERT	LP-----T-----PSGKSW-V-PSPARSP-----EVP	283
TmtTERT	AW---NLGSNVDKNKFT-LDIIYDTQ-SLSFVESFSVNNFIKIKSISQENEGTAETPDAP	376
PvTERT	EKEMRNLVPTKSKNIVM-LDDGGDGSTSKRCARLCTEDGLIVKSVQSPECGAQMSNP	374
xTERT	V-----DHFD-LP-----MCGSVSYLSNMY-----PKTN	302
ZfTERT	KIR-----NENHES-----	283
OlaTERT	--E-----RRQHEA-----V-----	262
TtTERT	L--VENYKQKYNQPNFSQLT-----	88
AtTERT	K-----VDCNAPC-IT-----PSTN	274
Sc_Est2p	-----YKENLKCGHFNGLDEI-----LTTCFALPNSRKIALPCLP	56
AmexTERT	SRLQNKVD---IPVCEDSLS-PASPFEANR-----RET-----HVVEENS-----EKF	398
hTERT	-----EATS-LE-----GAL-----	289
mTERT	T-----AEKDLS-SK-----GKV-----	295
TmtTERT	SLVQEVQDSKEKSVTDDENS-LRLRVQCNKLYKSSTET-K-----TNS-----SR-	419
PvTERT	YAVPDNQE-----SFLCDKILTLDNES-E---TLCELNS-----RR-	406
xTERT	VQVT-----GLITSGYK-KTKTFQCQKPVSCQKK-T-----TAF	335
ZfTERT	-----QSFAIS-----KKR-A---RDNEENI-----SL-	302
OlaTERT	-----LDESTLS-----GKS-G-----ENDA-----A--	278
TtTERT	-----IKQVIDDSIILLGNKQNY--VQQIGTTTIGFYVEYENINLSRQTLYSSNF	136
AtTERT	GKVSTGN-----D-----EMNL-----HI-	288
Sc_Est2p	GDLSHKAV-----IDHCIIYLLTGELYNNVLTFGYKI-A---RNEDVNN-----SLF	99
AmexTERT	GNVLHLPKI-----RNNVTT--ECITLQEKAYSVKCKKDQLFREEIKEA---KNNW-	444
hTERT	-S-----GT-----R-----HSHPSVGRQHAG-----	306
mTERT	-S-----DL-----S-----LS-GSVCCCHKPS-----	311
TmtTERT	-----E-----GVELDICKFQVGSVQMKA---EDTFL	444
PvTERT	ESSTRQPKL-----R-----TGDSDVCFGQPL-----GTEM	432
xTERT	YS-----V-----AGD---CNL-----SLKDN---VNKL-	353
ZfTERT	---KRQRM-----E-----EIDQVAKIRNE-----	319
OlaTERT	-----AV-----K-----PPPETSAAAPP-----	292
TtTERT	RNLLNIFGEEDFKYFLIDFLVFTKVEQNG---YLQVAGVCLNQYFSVQVKQKKWKYKNNFN	193
AtTERT	-----GI-----N-----GS-----LTDF-	297
Sc_Est2p	CHSA---NV-----NVTLLKGAAWKMFHSLVGTYAFVDLLINYTVIQFN---GQFFT	145
AmexTERT	----QEAKPTK---SVSK-Q-----PTQILPSN---IIIERGYLLYS-NFSFR-----	480
hTERT	-----PPS---TSRPPR-----PWDTPCPP---VYAETKHFLYS-SGDK-----	338
mTERT	-----STS---LLSPPR-----QNAF-QLR---PFIETRHFLYS-RGDGQ-----	343
TmtTERT	KYRGLKCPPTN---IAKKL-----SNKISRSR---VYIGRKGLYS-SRSFR-----	484
PvTERT	TSGGRGCKTRV---SKSVQN-----SDRSSVPV---TYIERRFLLYC-HRQLK-----	473
xTERT	-----ITN---ASVPTA-----QRSLFSN---IFIDFGRTLILY-SISYK-----	386
ZfTERT	NHGSQS-----WKPAD-----QRPPRSQ---CSIRVLSMLYN-GRGM-----	353
OlaTERT	LEGGPS-----WRSGA-----FPPLPSSQ---CFIRTLGFLYG-GRGM-----	326
TtTERT	MNGKATSNNNQ-----N---NANLSNEKKQENQYIYPEIQRSQIFYCNHMGREPGVFK	243
AtTERT	-----VK-----QAK---QVKRNKNFKFG-LSETY-----	318
Sc_Est2p	QIVGNRCNEPHLPKWAQRSSSSSATAAQIKQLT---EPVTNKQFLHKLNLINSS-----	196
AmexTERT	-----EGFSVSFLLNLTLCQCPFGGQ-----RLVENIFLSRGPFEHHPVNKPATTS-KKW	528
hTERT	-----EQLRPSFLLSSLRPSLTGAR-----RLVETIFLGSRPWMPG-----TP-RRL	379
mTERT	-----ERLNPFSLLSNLQPNLTGAR-----RLVEIIFLGSRPRTSG-----PL-CRT	384
TmtTERT	-----ECFPKSFLLNRLKGCQAGGQ-----RLVETIFLSKMLVQKCSENTPSYN-WRK	532
PvTERT	-----ERLPESFILNRLKSFSSGGR-----RLVEVIVLDSKITQPD SINPRSSG-KRK	521
xTERT	-----KGFSESFILNSLDSTPSGSQ-----KLVEIIFLSNFLAEQNF-DQPKRDE-NCR	433
ZfTERT	-----KNFLLNRKLGVGGAARMQGEDLVRMIFLQS---ES-----ND-SKP	391
OlaTERT	-----HGFCLNRKRRTAAGPRLQGQDLVRLVFFEGLPYLNG-----QE-RKP	368
TtTERT	SSFFNYSEIKGFQFKVIEKQLQGRQ-----FINS-----KIKPDHPQTIIK	286
AtTERT	-----SVIPPNHILKTLRPNCSDSK-----LLMNHIFGEVNVWSTTPSHG---KG-NCP	363
Sc_Est2p	-----SFFPYSK---ILPSSSSIK--KLTDLREAIPTNLV-----KIP	230
AmexTERT	KRLPKRYWP-----MKCVFQELVDNHNKCPYKVLLRNNCPVRLPQVSLESNASL	577
hTERT	PRLPQRYWQ-----MRPLFLELLGNHAQCPYGVLLKTHCPLRAAVTPAAGV---	425
mTERT	HRLSRRYWQ-----MRPLFQQLLVNHAECQYVRLLRSHCRFR---TANQQV---	427
TmtTERT	KRLPRRYWQ-----MRDVFQKLLKNHAKCPYLVLLKKNCPVW---ISETNSSKTDTM	581
PvTERT	RRLPKRYRE-----MRDLFQELLENHSHKCPYLVLRKNCPVW---VSESQKSTEGE	570
xTERT	YKLPKRYWK-----MKPHFQELIQNHKKFPYLVYLNKHCVPRSSMACSEKRSIQ	482
ZfTERT	KKLPKRFFA-----MVPFLSRLLRQHRKCPYRLFQKRCAGNP-----	429
OlaTERT	KKLPRLRYFN-----MVPVFGRLLRQHRKCRYSSVLHRMCPVVELSRA-----	410
TtTERT	KTLLKEYQSKNFSQCEERDLFLEFTEKIVQNFHNINFNYLKKFKCLPENYQSLKSQVKQ	346
AtTERT	SGSICLYHS-----LLKSLKNLIGKTKSSHLKMLLDKHC PVLLQLQEDALKSGTT	412
Sc_Est2p	QR---LKIR-----MNLTLQKLLKRHKRLNYSILNSICPPLEGTVLD-----	270

AmexTERT	EKSV-CG-VP--GPPHVDRGKAPNVQENTDERERSESTTLSGCKMEVAYEFSQVEAKHSS	633
hTERT	CAR-----EKPQGS-----	434
mTERT	-----	427
TmtTERT	CQSVSCDGVQIDREAEGQLGKEPPIC-----LTSNGREGGYTAVPNGSCSLSKRTST	633
PvTERT	SD-----KEKDRHKGRSSRS-----RQDTTLENCFRLAPDGLNPFPGTSE-	611
xTERT	KNRIEND-----	489
ZfTERT	-----	429
OlaTERT	-----	410
TtTERT	-----	346
AtTERT	SQSSRRQ--KAD-----KLPHGSSS-----	430
Sc_Est2p	-----	270
AmexTERT	N--TLVSTVTFKEAQSSSQPGKEATAQQFRDSSFMKLLRQYSSLWQVYAFARECLKTVPVK	691
hTERT	-----VAAPEEEDTDPRLVQLLRQHSSPWQVYGVRACLRRLVPP	475
mTERT	-----TDALNTSPPHLMDLLRLHSSPWQVYGFLRACLCCKVSA	465
TmtTERT	DLSILSNPEKF--VLGRTENERQNAKDFCDPGLKELLRQHSSHWQVYVVRDECLDLVPA	691
PvTERT	--DSIRKSENA--ELKRKNTEGQISPDSSSSGVMFLKQHSTHWQVYMFVRECIERVPA	667
xTERT	-----GKQLKHFTTKANLLSLLKQHSSIWQVYMFVRECLNNVVPD	529
ZfTERT	-----DVKDMESSLKSHSSPYRVYLFVRECLRHII PH	461
OlaTERT	-----AQGELSSLI PQHCAPHRVYLFVRECLTAVVPE	442
TtTERT	-----IVQSENKANQQSCENLFNSLYDTEISYQITNFLRQIIQNCVPN	390
AtTERT	-----SQTGPKP---C--PSVEERKLYCTNDQVVSFIWAICRYIVPE	467
Sc_Est2p	-----LSHLRQSPKERVVKFIIVILQKLLPQ	297
AmexTERT	ELWGSNHNKYRFFKNVKTFFIS-LGKFGKFSLRELMWKMVRVTDCAWLRLGK-----DDHF	744
hTERT	GLWGSRHNERRFLRNTKKFFIS-LGKHAKLSLQELTWKMSVRDCAWLRSP-----GVGC	528
mTERT	SLWGTRHNERRFFKNLKKFFIS-LGKYGKLSLQELMWKMKVEDCHWLRRSP-----GKDR	518
TmtTERT	ELWGS SHNKCRFFKNVKTFFIS-LGKFARFSLQELMWKMVRVNDCTWLRLVIK-----GDHF	744
PvTERT	ALWGS SHNKCRFYKNVKKFFIS-LGKFNVFSLRELMWKMVRVKNCVWLRLNK-----EQGHF	721
xTERT	IMWGS SHNKCRFFRNKVSFLFFSGKFGKISLSELMWSMRVEDCSWIRLQK-----SDHF	583
ZfTERT	ELWGCQENQLHFLSNVNKFL--LGKFERLTLVQLMWRMKVQACHWLGPKK-----R---	511
OlaTERT	ELWGS DHNRLQFFSRVRGFLK--SGKFERISVAELMWKIKVMDCDWLKLRR-----TAGR	495
TtTERT	QLLGKKN--FKVFLEKLYEFVQ--MKRFENQKVLDIICFMDVFDVEWFVDLK-----NQKF	442
AtTERT	SLLGTTQHMRVLRKNIAWFVS--RRNEKCTVNQFLHKVKPSDFPFARKELCCMVNGHEL	526
Sc_Est2p	EMFGSKKNKGKIKNLNLLLS--LPLNGYLPFDSLLKKLRLKDFRWLFISDIWFT-----	350
AmexTERT	V-PASEHRFREVI FAKFLYWLMDTYVIQLLRSFFYITETMFQKNALFFYRKCIWSKLHKI	803
hTERT	V-PAAEHRLREEILAKFLHWMLSVYVVELLRSFFYVTETTTFQKNRLFFYRKSVWSKLQSI	587
mTERT	V-PAAEHRLRERILATFLFWMMDTYVQLLRSFFYITESTFQKNRLFFYRKSVWSKLQSI	577
TmtTERT	V-PALEHHYREEILAKFLYWLMDTYVIQLLRSFFYITETMFQKNMLFFYRKLIWSKLQNI	803
PvTERT	V-PSSEHRFRQDLMAKFLYWLMDSYVAELLRSFFYITETMFQKNLLFFFRKSIWSKLESI	780
xTERT	V-PASEHLLREKILAKFVFWLMDTYVIQLLKSFFYVTETMFQKHRLFFYRKSVWKKLQNI	642
ZfTERT	Q-CASEHRYREWMLGQCMGWMLSGFVVGLVRAQFYITESMGHKHTLRFYRGDVWSRLQDQ	570
OlaTERT	F-PPSELAYRTRILSQFLTWLLDGFVVGLVRACFYATESVGQKNAIRFYRQEVWSKLQDL	554
TtTERT	TQKRKYISDKRKILGDLIVFIINKIVIPVLRYNFYITEKHKEGSQIFYRKPIWKLVS KL	502
AtTERT	Q-SESIRSTQQMLCTKWISWLFLEIVKKLVHFNFYATESQGGRLNIYYRKRKSWE RLISK	585
Sc_Est2p	---KHNFENLQLAICFISWLFRLQIPKIIQTFYCTEISS--TVTIVYFRHDTWNKLITP	406
AmexTERT	GLGKHF----AKVKLRSLSSSRDVAALKQ--NPLISRLRFIPKPNG--LRPIVKVQNVLDVQ	856
hTERT	GIRQHL----KRVQLRELSEA EVRQHREARPALLTSRLRFIPKPDG--LRPIVNDYVVGAR	643
mTERT	GVRQHL----ERVRLRELSQE EVRHHQDTWLAMPICRLRFIPKPNG--LRPIVNSYSMGTR	633
TmtTERT	GMRNHF----AKVHLRALSAEIEIKVQKKCVPMASKLRFIPKPNG--LRPIVKNSVSGAK	859
PvTERT	GIRNHL----AKVHLRVLLKEI EIKTLQOQKCVPLASKLRFIPKPNG--LRPVVKQNGVVGAE	836
xTERT	GLRKHL----EKVKLRSLSSDELENMQQWKNVPLVSRLRFIPKTNG--LRPISKISSTLSSQ	698
ZfTERT	AFRAHL----CKGQWRPLSPS QALKVPN---SAVTSRIRFIPKTSS--MRPITRLSGSR---	620
OlaTERT	AFRRII----AKGEMEELSPA QVASLPK---GTVISQLRFIPKTDG--MRPITRVIGAD---	604
TtTERT	TIVKLEENLEKVEEKLI PED-----SFQYPQGLRIIPKKGSS--FRPIMTFLRKDKQK	555
AtTERT	EISKAL----DGYVLVDDAEAE-----SSRKKLSKFRFLPKANG--VRMVLDFSSSSRSQ	634
Sc_Est2p	FIVEYF----KTYLVENNVCRNHNS--YTLSNFNHSMKRIIPKKSNEFRIIAIPCRGADE-	460
AmexTERT	LHSKEKRDRKMQYFNTQLKNLFGVLNYERTRNPNNLLGAFGFGLDGISKAWRQFVLKV-LE	915
hTERT	TFRRE---KRAERLTSRVKALFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLRV-RA	699
mTERT	ALGRR---KQAQHFTQRLKTLFMSLNYERTKHPHLMGSSVLGMNDIYRTWRAFLRV-RA	689
TmtTERT	TLNRKSRDKKVHYFNTQLKNLFSVLNYERTNTSLLGSSVFGKDDIYKIWRKFVSEV-LE	918
PvTERT	TFSRKAGEKKIQYFNTQLKNLFSVLNYERIKNPSLLGSSVFGKDDIYAVWKKFVLKV-LK	895
xTERT	-QSKENQEKKIHHS SQIRNLFSVLNYEWNRCSLIGSSVFGMDDIYKKWKKFVLDF-EK	756
ZfTERT	-----DTLQYFQSCVRVLQNVLSVCVREAPGPMGSTVWGWQDIHRRQLQDFSPQQ---	669
OlaTERT	-----SNTRLHHKRIRDLSMLQARVRSAPALLGSTVWGMTDIHKVLRSLAPAQ---	653
TtTERT	N-----IKLNLNQILMDSQLVFRNLKMDLGQKIGYSVFDNKQISEKFAQFIEKW---	604
AtTERT	-----SLRDTHAVLKDIQLKEPDVLGSSVFDHDDFYRNLCYPYLHL-RS	677
Sc_Est2p	--EFTIYKENHKNAIQPTQKI--LEYLRNKRPTSFTK-IYSPTQIADRIKEFKQRL LKK	516

AmexTERT	SNF <b>KEKQYYFVKTDVTGAYDTIPHAKLIEVVS</b> KILNP	SD--NYCIRRYAEIWVDPAGH <b>IR</b>	973
hTERT	-QD <b>PPPELYFVKVDVTGAYDTIQDRLTEVIASII</b> KPQ	--NTYCVRRYAVVQKAHGH <b>VR</b>	756
mTERT	-LD <b>QTPRMFYFKADVTGAYDAIPQGKLVEVVANMIR</b> H	SE-STYCIRQYAVVRRDSQGV <b>VH</b>	747
TmtTERT	SND <b>KIPRFYYVKADVTGAYDTIPHDKLVEVVSQIL</b> DP	EKRTVYCIRRYAVIKITMSGQ <b>IR</b>	978
PvTERT	LNAV <b>LPFRFYFVKADVIGAYDSIPHNLKEVILQAL</b> SP	DEKTTYSIIRRYAVIIRTRNGL <b>IR</b>	955
xTERT	PQV <b>EKLQFYFVKTDVKGAYDTIPHSKLDEVISKVIN</b> P	NANEVYCIRRYATVSVDPTRG <b>II</b>	816
ZfTERT	-KS <b>SPRPLYFVKVDVSGAYDSLPHLKLVEVLKEVL</b> GP	FAEQSFFLRQYSSVWSDPTRG <b>LR</b>	728
OlaTERT	-KD <b>KPQPLYFVKVDVSGAYDSLPHDKLKEVITEAL</b> SP	VQEEVFTVRHYAKIWADSHEG <b>LK</b>	712
TtTERT	KNK <b>GRPQLYYVTLDIKKCYDSIDQMKLNNFFNQSD</b> LI	--QDITYFINKYLLFQRNKRPL <b>LQ</b>	662
AtTERT	QSG <b>ELPPLYFVVADVFKAFDSVDQGKLLHVIQSF</b> LKD	E---YILNRCRLVCCGK--- <b>R</b>	729
Sc_Est2p	FNN <b>ALPELYFMKFDVKSCYDSIPRMECMRILKDAL</b> KN	EN--GFFVRSQY-FFNTNTGVL-	572
AmexTERT	<b>KSYKRHVATM</b> ---DDF----- <b>LPNTKMFVS</b> -----	<b>HLQON</b> -----	1000
hTERT	<b>KAFKSHVSTL</b> ---TDL----- <b>QPYMRQFVA</b> -----	<b>HLQET</b> -----	783
mTERT	<b>KSFERRQVTTL</b> ---SDL----- <b>QPYMGQFLK</b> -----	<b>HLQSDA</b> -----	776
TmtTERT	<b>KYYRRHVSTF</b> ---KDF----- <b>MSHMLRFVS</b> -----	<b>HLQES</b> -----	1005
PvTERT	<b>RYYRRHVSTY</b> ---KEF----- <b>ISDMKEFIN</b> -----	<b>HLQEV</b> -----	982
xTERT	<b>KSEKRVHSEL</b> ---ADV----- <b>LPNMKQFVS</b> -----	<b>NQQEK</b> -----	843
ZfTERT	<b>KRFCTKAEMS</b> ---E----- <b>PLNMKGFFV</b> -----	<b>DEQVS</b> -----	753
OlaTERT	<b>KAFARQVDFS</b> ---DGSM----- <b>GSTSMKGFVM</b> -----	<b>SLQKS</b> -----	741
TtTERT	<b>IQQTNNLNSAMEIEEEKINKKPFKMDNINFPY</b> YFN	LKERQIAYSLEYDDDD <b>QILQKGFK</b> EI	722
AtTERT	<b>SNWVNKILVS</b> ---SDK----- <b>NSNFSRFTS</b> -----	<b>TVPIN</b> -----	756
Sc_Est2p	<b>KLFNVVN</b> ---A---SRV----- <b>P</b> -----		584
AmexTERT	- <b>GSLKHAILVEQALHLNENSRLNQFFQOMITNN</b> ILK	VGDKCFVQCRGIPQGSILSTV <b>LC</b>	1059
hTERT	- <b>SPLRDAVVIEQSSSLNEASSGLFDVFLRFMCH</b> HAV	RIRGKSYVQCQGIPQGSILST <b>LLC</b>	842
mTERT	- <b>SALRNSVVEIQSISMNESSSLFDFFLHLRHS</b> VVK	IGDRCYTQCQGIPQGSILST <b>LLC</b>	835
TmtTERT	- <b>TSLQNAIVVEQSLSLNETSSSLFAFFLQMIH</b> NNI	LEIEGRYYLQCCGIPQGSILST <b>LLC</b>	1064
PvTERT	- <b>TSLRNAVVEQSVSLKESNTSLAEFFLKFQI</b> ONS	ILKIKDRYYVQRCGIPQGSILST <b>LLC</b>	1041
xTERT	- <b>NLLRNTILVEQNLLNNESSVKLLAVFQQIIR</b> SHI	LRIKDRYYMQCCGIPQGSMLST <b>ILC</b>	902
ZfTERT	- <b>GRLHDAILVER-HSSEVRGDDVFQFFQKMLC</b> SYV	IHRDQOMFRQVCGIPQGSVSS <b>LLC</b>	811
OlaTERT	- <b>SKVHHAVLVEQAFGSNLRGKDALQFFTQML</b> TGS	VVQHGGKTYRQCRGIPQGSVSS <b>LLC</b>	800
TtTERT	<b>QSDDRPFIVINQDKPRCITKDIHNNHLKHIS</b> QYN	VISFNKVKFRQKRGIPQGLNIS <b>GVLC</b>	782
AtTERT	--- <b>ALQSI</b> VVDKGENHRVRKKDLMWVIGN <b>MLK</b> NN	<b>MLQLDKSFYVQIAGIPQGHRLSS</b> LLC	813
Sc_Est2p	--- <b>KPYELYIDNVRTVHLSNQDVINVMEIIF</b> K	TALWVEDKCYIRE <b>DGLFQGS</b> SLSA <b>PIV</b>	641
AmexTERT	<b>SLCYGDMENNFSGI</b> Q-----	QDGV <b>FMRLIDDFLLVTPYLDKAE</b>	1098
hTERT	<b>SLCYGDMENKLFAGI</b> R-----	RDGL <b>LLRLVDDFLLVTPHLLTHAK</b>	881
mTERT	<b>SLCFGDMENKLF</b> AEVQ-----	RDGL <b>LLRFVDDFLLVTPHLDQAK</b>	874
TmtTERT	<b>SLCYGDMENKLF</b> CGIQ-----	RDGV <b>LIRLIDDFLLLTPHLLTAK</b>	1103
PvTERT	<b>NLCYGDMENKLLQ</b> GVQ-----	KDGV <b>LMRLTDDFLLVTPHLLTQAK</b>	1080
xTERT	<b>SLCYGDMENAM</b> LGGIQ-----	KNGV <b>LMRLIDDFLLVTPHLDQAK</b>	941
ZfTERT	<b>NLCYGHMEKAL</b> LKDIA-----	KGGC <b>LMRLIDDFLLITPHLLSKAT</b>	850
OlaTERT	<b>CLCYGHMENVL</b> FRDIK-----	NKGC <b>LMRLVDDFLLITPDRNQAQ</b>	839
TtTERT	<b>SFYFGKLEEEYTQ</b> FLKN-----	AEQVNGSIN <b>LMRLTDDYLFISDSQQNAL</b>	828
AtTERT	<b>CFYYGHLERTLI</b> YPFLEEASKDVSSKECSREEELI	IPTSYK <b>LLRFIDDYLFVSTSRDQAS</b>	873
Sc_Est2p	<b>DLVYDDLLEF-Y</b> SEFKA-----	SPSQDTL <b>ILKLADDFLIISTDRQQVI</b>	683
AmexTERT	<b>TFLRTLAEGIPQY</b> GCSISLSKTMVNFPLT-DLPGCS	QAEQL---PAR <b>SVF</b> PWC <b>GVLF</b> DTQ	1154
hTERT	<b>TFLRTLVRGVPEY</b> GCVVNLRKTVVNFPEDEALG	TAFVQM---PA <b>HGLF</b> PWC <b>GLLD</b> TR	938
mTERT	<b>TFLSTLVHGVPEY</b> GCMINLQKTVVNFPEPGTLG	GAAPYQL---PA <b>HCLF</b> PWC <b>GLLD</b> DTQ	931
TmtTERT	<b>TFLRTLATGIPEY</b> GFLINPKKTMNFHVEDEDI	PGCSKFKQL---PY <b>CGVI</b> PWC <b>GLLD</b> IQ	1160
PvTERT	<b>MFLRTLAMGVPEY</b> GFVINPAKTVVNFPIDEDI	PGCSEFKQL---PA <b>HGVI</b> PWC <b>GLLD</b> DTQ	1137
xTERT	<b>TFLRTLAEGIPQY</b> GCSIS <b>PQKTVVNF</b> PVD-DI	PECSEVEQL---PS <b>HCLFRWC</b> GLL <b>LD</b> DTQ	997
ZfTERT	<b>EFLTLLSGVPDYG</b> CQIN <b>PQK</b> VAVNF <b>PVCVS</b> -W	VNSGVSVL---PS <b>SCLF</b> PWC <b>GGLMI</b> HTR	906
OlaTERT	<b>SFLSILLAGVPQY</b> GVVAN <b>PQKVVVNF</b> QSGEGG	AFPDIRVL---PP <b>HCLF</b> PWC <b>GLLD</b> DMR	896
TtTERT	<b>NLIVQLQNCANN</b> NGFMFNDQKITTNFQFPQED	YNLEHFKIS---V <b>QNECQWIGKSI</b> DMN	884
AtTERT	<b>SFYHRLKHGFKD</b> YNCFMNETKFCINFEDKEEH-RC	SSNRMFVGDN <b>GVFVRWTGLLI</b> NSR	932
Sc_Est2p	<b>NIKKLAMGGFQK</b> YNAKANRD <b>KILA</b> VSSQS-----	DD <b>DTVIQFCAMHI</b> FVK	728
AmexTERT	<b>TLEVYCDYSRYACT</b> SIRSSLTISHKAETG-TSMR	HKLIRVLKLCKSIFLDLMVNS <b>LR</b> TV	1213
hTERT	<b>TLEVQSDYSSYART</b> SIRASLT <b>FN</b> RGFKAG-RN	MRRKLFVGLRLKCHSLF <b>LDLQVNSLQ</b> TV	997
mTERT	<b>TLEVFCDYSGYAQ</b> TSIKTSL <b>TQ</b> SVF <b>KAG</b> -K	TMRNKLLSVLR <b>LKCHGLF</b> LDLQVNS <b>LQ</b> TV	990
TmtTERT	<b>TLEVYCDYSSYACT</b> SIRSSLA <b>FN</b> SSNTAG-KN	MKYKLVTVLKLCHSL <b>FLNLQVNSL</b> RTV	1219
PvTERT	<b>TLEVYCDYSSYACT</b> SIRSSLS <b>FN</b> SSSTKAG-V	LRNKLAVLQ <b>LKCHSLF</b> VDLQ <b>INSLR</b> TV	1196
xTERT	<b>TLDVYYDYSSYACT</b> SIRSSMT <b>FC</b> HSSAAG-KY	MKQKLIRVLRLKCHSL <b>FLDLKVN</b> SLRTV	1056
ZfTERT	<b>TLDVYKDYSRYDGL</b> SLRYS <b>LT</b> LSA <b>HS</b> PS-TVM-	KKLLSVLSIKSTDIFLDLRLNS <b>VEAV</b>	964
OlaTERT	<b>SLDVCKDYSSYAG</b> LSLRYS <b>LT</b> LSA <b>HS</b> AG-Q	MMRRLMSILRIK <b>CHPLFLDLK</b> TNS <b>LES</b> A	955
TtTERT	<b>TLEIKSIQKQ-TQ</b> QEI <b>NT</b> INVAISIKNLKSQ	LKNKLS-LFLNQ <b>LIDYFNP</b> NINS <b>FEGL</b>	942
AtTERT	<b>TFEVQVDYTRYLS</b> GHIS <b>ST</b> FSVAWQ <b>NK</b> PV-R	NLRQKLCYFLVPK <b>CHPILFDS</b> NSIN <b>SEI</b> V	991
Sc_Est2p	<b>ELEVWKHSSTMN</b> NFHIRSKSS-----	KGIFRSLIALFN <b>TRISYKTID</b> TNLNSTNTV	779

AmexTERT	FINIYKIFLLQAYRFHACVIQL---PFN-----QGVRK-NPSFFLSVISDMAPCCYS	1261
hTERT	CTNIYKILLQAYRFHACVLQL---PFH-----QQVWK-NPTFFLRVISDTASLCYS	1045
mTERT	CINIYKIFLLQAYRFHACVIQL---PFD-----QRVRK-NLTFFLGISSQASCCYA	1038
TmtTERT	FINIYKIFLLQAYRFHACVLQL---PFN-----QQVRK-NPCFFLRISDTASCCYS	1267
PvTERT	CINIYKILLQAYRFHACVLQL---PFN-----QKIKS-NPREFFLKIISDTASCCFS	1244
xTERT	CINTYKIFLLQAYRFHACVVQL---PFG-----QRVMN-NPPFFLTVISDMAPCFYT	1104
ZfTERT	YRSLYKLILLQALRFHACVRSL---PLG-----QSVNR-NPSFFLKMIWRMTRVTNK	1012
OlaTERT	YKNIHKLVLQACRFHVCVQSL---PFA-----QTVAK-NPTYFQQMIWDMAHYANA	1003
TtTERT	CRQLYHHSKATVMKFYPFMTKLFQIDLKSKSQYSVQYGKENTNENFLKDILYYTVEDVCK	1002
AtTERT	RLNIYQIFLLAAMKFHCYVYEV---SRF-----WKL---HPQTLFKFITISVRYMFR	1037
Sc_Est2p	LMQIDHVVKNISECYKSAFKDL---SIN-----VTQNMQFHSFLQRIEMTVSGCP-	827
AmexTERT	ILKSKNIGIALGTKD-ACNTFPFEAAQWLSYHAFIVKLTCHKA---VYKCLLKPLQNCVK	1317
hTERT	ILKAKNAGMSLGAGK-AAGPLPSEAVQWLCHQAFLLKLTRHRV---TYVPLLGSRLTAQT	1101
mTERT	ILKVKNPGMTLKAS---GSFPPEAAHWLCYQAFLLKLAHSV---IYKCLLGPLRTAQK	1091
TmtTERT	ILKTKNTGIALGTKG-ASGLFPSEAAEWLCYHAFI IKLTNHKV---VYKCLLRFLKICEL	1323
PvTERT	VLKTKNKDVSFTSTG-TSVVLTYEYVQWLTYHAFVIKLTNHKV---IYKCLLAPLKHCKK	1300
xTERT	TFKAKNKDLTRGYKD-VSCQFNFEAVQWLSYQAFLLKLHNHKV---LYKCLIGPLQNCMK	1160
ZfTERT	LLTHINKGLPVCSD-SGGVLQSEAVQLLFCCLAFETLFRFRS---VYHCLIPALHKRKR	1068
OlaTERT	LIRRSNTGLVLGDGA-QKGSVQYEAVELLFCLAFRLVLSKHP---VYKDLLPRLHKWKR	1059
TtTERT	ILCYLQFEDEINSNI---KEIFKNLYSWIMWDIIVSYLKKKKQFKGYLNKLLQKIRKSRF	1059
AtTERT	LINRRVRRINTGSSFRPVLKLYKEEVIWGLDAYIQVLKKKNS---RYRMLLIYLSALS	1094
Sc_Est2p	-----IT---KCDPLIEYVRFTILNGFLESLSNNTS---KFKDNIILLRKEIQ	870
AmexTERT	Q-----LSKKIHK-----ATIKMLNDVIEPS-----LHKDFAAILN-----	1348
hTERT	Q-----LSRKLPG-----TTLTALEAAANPA-----LPSEDFKTILD-----	1132
mTERT	L-----LCRKLPE-----ATMTILKAAADPA-----LSTDFQTILD-----	1122
TmtTERT	Q-----LFKKIPK-----ATMQLLKTVTEPA-----LCKDFKAIMD-----	1354
PvTERT	R-----LLRQIPE-----TTVQFLKEVTEPS-----LYEDFKAILD-----	1331
xTERT	Q-----LSRRLSQ-----DTIELLSVTDSS-----LHKDFSCIMD-----	1191
ZfTERT	A-----LQRELCG-----ITLARVRQASSPR-----IPLDFSMRV-----	1098
OlaTERT	R-----LERLLGD-----LRLARVRQAANPR-----ALLDFLAMQM-----	1090
TtTERT	FYLKEGCKSLQLILSQQKYQLNKKELEAIEFIDLNN-----LIQDIKTLPKISAKSNQQ	1114
AtTERT	K-----HSLSQQQLSS-----ELRYATDRSNSSSLWKLNLY-----	1123
Sc_Est2p	H-----LQAYIYI-----YI-----	880
AmexTERT	---	1348
hTERT	---	1132
mTERT	---	1122
TmtTERT	---	1354
PvTERT	---	1331
xTERT	---	1191
ZfTERT	---	1098
OlaTERT	---	1090
TtTERT	NTN	1117
AtTERT	---	1123
Sc_Est2p	---	880

**Figure S1.** Multiple Sequence Alignment (MSA) of TERT proteins of representative species: AmexTERT, *Ambystoma mexicanum*; hTERT, *Homo sapiens*; mTERT, *Mus musculus*; TmtTERT, *Terrapene mexicana triunguis*; PvTERT, *Pogona vitticeps*; xTERT, *Xenopus laevis*; ZfTERT, *Danio rerio*; OlaTERT, *Oryzias latipes*; Sc\_Est2p, *Saccharomyces cerevisiae*; TtTERT, *Tetrahymena thermophila*; AtTERT, *Arabidopsis thaliana*; HIV-1 RT.