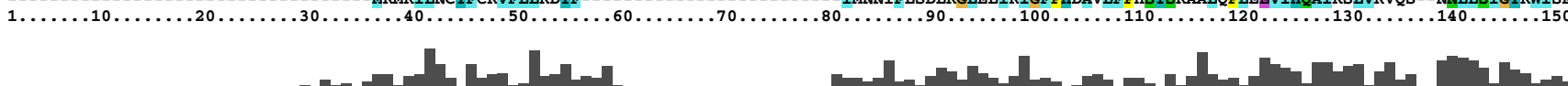


hsaTERT -----MPR-APRCRAVRSLRSHYREVLPATFVRRLLGPQGW-----RLVQRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
ptrTERT -----MPR-APRCRAVRSLRSHYREVLPATFVRRLLGPQGW-----RLVQRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
mmiTERT -----MPR-APRCRAVRSLRSHYREVLPATFVRRLLGPQGW-----RLVQRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
cluTERT -----MPR-APRCRAVRALLRGRYREVLPATFLLRLLGPQGW-----LLVRRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
btaTERT -----MPR-APRCRAVRALLRGRYREVLPATFLLRLLGPQGW-----LLVRRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
lafTERT -----MPR-APRCRAVRALLRGRYREVLPATFLLRLLGPQGW-----LLVRRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
mmuTERT -----MPR-APRCRAVRALLRGRYREVLPATFLLRLLGPQGW-----LLVRRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
rnoTERT -----MPR-APRCRAVRALLRGRYREVLPATFLLRLLGPQGW-----LLVRRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
mauTERT -----MPR-APRCRAVRALLRGRYREVLPATFLLRLLGPQGW-----LLVRRGDPAAFRALVAQCLVCPVWDARPPPAAPSFRRVSCCLKELVARVLQRLCERGA--KNVLAFGFALLDG 106
mdoTERT -----MASNPVAVSGSLLA-SVAFAVRSLVLAQYRDVGLAEFVQRLGDEAQAEGSGG--ADVQLLRGGEPEVVFVFSQCVVCPVWDARPPPRPLTFQQLSSQKEVVARIVQRIKCKK--KNILAFGYTLLEE 125
meuTERT -----MASRPPAPRSLLA-SAAFRPVRREVLRDSYRDVGLAEFVQRLGDEAQAEGSGG--ADVQLLRGGEPEVVFVFSQCVVCPVWDARPPPRPLTFQQLSSQKEVVARIVQRIKCKK--KNILAFGYTLLEE 131
oanTERT -----MAS-AAFFFAVHAVLRARVAAVLPDFVGGPLGAPRGL-----LPGLDGPDEIFITFLAQCVVCLPRGARPLDPLTFRQLSSQKEIVARIVQRIKCKK--KNVLAFGYTLLEE 109
ggaTERT -----MERGAQPGVGVR--LRNVAR-EEFPAAVLGCALRCYAEATPLEAFVRRLOE-----GGTGEVEVLRGDDAQCRTFVSQCVVCPVWDARPPPRPLTFQQLSSQSEVITRIVQRLCEKKK--KNILAFGYTLLEE 125
cjaTERT -----MERGADPGVGVRRLHNMAR-AEPFAAVLGCALRCYAEATPLEAFVRRLOE-----GGTGEVEVLRGDDAQCRTFVSQCVVCPVWDARPPPRPLTFQQLSSQSEVITRIVQRLCEKKK--KNILAFGYTLLEE 126
cmoTERT -----MAG-AEPPGAVLGCALRCYAEATPLEAFVRRLOE-----GGTGEVEVLRGDDAQCRTFVSQCVVCPVWDARPPPRPLTFQQLSSQSEVITRIVQRLCEKKK--KNILAFGYTLLEE 109
tguTERT -----MPGGRAAVSQGRRGCARWTRAQFGRNMAG-KEFPAAVLGCALRCYAEATPLEAFVRRLOE-----GGTGEVEVLRGDDAQCRTFVSQCVVCPVWDARPPPRPLTFQQLSSQSEVITRIVQRLCEKKK--KNILAFGYTLLEE 135
acaTERT -----MKKIEGAAPFALLPPRRGGPGQAMRRSQVRLRGCEFEVLPLEAFVRRLOEKEAKA-----GGTGEVEVLRGDDAQCRTFVSQCVVCPVWDARPPPRPLTFQQLSSQSEVITRIVQRLCEKKK--KNILAFGYTLLEE 135
xleTERT -----MPL-RTGGALLSILRLQLYGVGLIVETDTLQVFGG-----IKVPLVLEGGDSSEKFSFVAELVVCIPRGKFLPSFVFLQLSQQREVVAVIRQRIKCKK--KNVLAFGYTLLEE 109
cmtTERT -----XXX-----XXX 109
dreTERT -----MSGQSTDDGGFRVLPVQVQTLLEFDTGLQFPDGRKRV-----LLEETDGARFKLLSGLIVCA--TTP-POLRVPAQLSTLPEVAFILNHKRRKL--KNVLAFGYTLLEE 109
nfuTERT -----MSVTDMAVNTLRLMFLQHVQTLLEFFTSVQS--GHQER-----PVEQSD--RFSKSTRETFVCF--DKDLKIQSSNCTCFSELLAFILNHKRRKL--KNVLAFGYTLLEE 101
olaTERT -----MTSGDLSSNLILSLYKRTTLEFADGVVFRGRRRAA-----LQPSDDHSFKSFVRGFCF--DEEDQDVPSNCTCFSELLAFILNHKRRKL--KNVLAFGYTLLEE 105
omeTERT -----MTSEDVSRVLELLSLYKRTTLEFADGVVFRGRRRAA-----LQPSDDHSFKSFVRGFCF--DEELREVRSSKQICFSELLAFILNHKRRKL--KNVLAFGYTLLEE 104
ecoTERT -----MTADLSPTLDILSRVYQHVQTLLEFDTGLQFPDGRKRV-----LLEETDGARFKLLSGLIVCA--TTP-POLRVPAQLSTLPEVAFILNHKRRKL--KNVLAFGYTLLEE 105
truTERT -----MSITDLSPTLDILSRVYQHVQTLLEFDTGLQFPDGRKRV-----LLEETDGARFKLLSGLIVCA--TTP-POLRVPAQLSTLPEVAFILNHKRRKL--KNVLAFGYTLLEE 105
spuTERT-L -----MDILERTFFRVSCLEDLRLDNGCPL-----LCIPKDKAGYRAFLQSTLVGIPSCINISYQGPIDYTOHSDHMEVINRVLRLQHQGGKKNVLLNGFTSWRS 97
spuTERT-S -----MDILERTFFRVSCLEDLRLDNGCPL-----LCIPKDKAGYRAFLQSTLVGIPSCINISYQGPIDYTOHSDHMEVINRVLRLQHQGGKKNVLLNGFTSWRS 97
hroTERT -----MTDQORETEMAELLKXKRVILEFTITVIVKVNNSIIN-----LNNMNP-----DDGNNKLLPQLFRNAVAVHQCCKPRAAPQVGAEQQLDWYQLIESCLNLMFRLGKDKWYLPCTV 117
dpuTERT -----MTESGFDILKKFVAGRGVLSLADLK-----TMNNIFLSDLKGLLEIKIGFPHDAVLPHSISYKALQPLEVHQAISKLVRVQS--NNLSIGYKWISE 92
hmaTERT -----MKMKILNCYFCVFLLLKDYF-----TMNNIFLSDLKGLLEIKIGFPHDAVLPHSISYKALQPLEVHQAISKLVRVQS--NNLSIGYKWISE 88



hsaTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
ptrTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
mmiTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
cluTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
btaTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
lafTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
mmuTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
rnoTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
mauTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
mdoTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
meuTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
oanTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
ggaTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
cjaTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
cmoTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
tguTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
acaTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
xleTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
cmtTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
dreTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
nfuTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
olaTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
omeTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
ecoTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
truTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
spuTERT-L ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
spuTERT-S ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
hroTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
dpuTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198
hmaTERT ARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQA-RPPPH-----ASGPFR-----RLG 198



Figure S3

hsaTERT CERAWNHSVREAGVPLGLPAPGARRRGGSASRLP-----LPKPRRRGAAPERTPVGQGSWAHPGRTTR-----GPSDRGFVCVSPA-RPAEEATSLLE 286
ptrTERT CERAWNHSVREAGVPLGLPAPGARRRGGSASRLP-----LPKPRRRGAAPERTPVGQGSWAHPGRTTR-----GPSDRGFVCVSPA-RPAEEATSLLE 286
mm1TERT CELAWNRSVREAGVPMGLPAPGARRRGGSANRSLP-----LPKPRRRGAAPERTPVGQGSWAHPDRTTR-----GPSDRGFVCVSPA-RPAEEATSLLE 286
cluTERT GLGAGAGASADLRPTTRQONSGARRRRGSPGSGVP-----LAKPRRRSVAS-----EPERGAHRSFPFR-----AQQPT-VSEAPAVTP- 271
btaTERT RPASSNGGHGCEAEGILLEARAQGARRRRSSARGLP-----PAKPRRRGLEPG-----RDLEGGVARSFPFR-----VVTPT-RDAEEAKSRK 277
lafTERT -----TVGGTRRRWDSAGERHP-----LAKSRHSLALEPGVQVQS-----WAHLDRAC-----GQSDSDPHAVPTGRRAAAKAVSWE 263
mmuTERT LQQIKSSSRQEAAPKPLALESRGTKRHLSTLSTSV-----SAKKARCYPVPRVVEEGPHRQVLPFSGKSW-----VPSPARSPVFP-----AEKDLSSK 292
rnoTERT AHQIKNSHQEAAPKQALPSRGTKRLLSLTSTNVP-----SAKKARFEPALRVDKGPHRQVVPFSGKTW-----APSPAASPVP-----AAKNLSLK 292
mauTERT THRVNRSHQEAAPKPLPSRGAKRSLSTNRSVP-----PSKKARCDLAPRLKGPYRQAVPTPSDKTW-----VNPAPKSHAVPIS-RTTKEDLSSG 295
mdoTERT LRKEMLGSKKAIVVQONQNSTEDPEDKSLRGRPEESC--DQGE-----GVRTHSVHSTMALLSKRQREDEKSEISAKRSKTEELLQEKRRKELILGQ-----ELHENNESNLDNVESSLQSRMEICSSRLPFNE 363
meuTERT VRKAILRSKDKTLKAVQONQNSAEDMVEEFLDRPENSCEGIEQGSNADQLEPAHSAHSMALLSKRQREDEESEISAKRPKKECLLEKRRKELILEGQ-----FELHEN-ESNDSDAENIQTSMEICSSKHFCNE 378
oanTERT GEQSDRKRKRKRVRGERESGAGGRRERTRLESRRINPGGRE-----RDRFVTDGPRKRDPDGLAPRAAKRYLEKDERGTSKRRKGAVLA-----GRDGGDPGSPSPATPTREVRPEAPGSE 334
ggaTERT RHYLSKSQWWKCRPRRRGRVSSRRKRSHRIQSLRSGYPSAKVNFQAGRGISTVWARLEKQSCSSSLCLPARAPSLKRRKDGEQVEIAKRVKVMKEI--EEQACSIVPDVNQSQRHGTSMHAPRAVGLIKEHYISERSNSEMSGP 380
cjaTERT RHYLSKSQWWKCKPRHGHVSSRRKR-SQRIQSLRPGYQSSEKVDFAGRHISIVNAHMEKQSCSSSLCLPNRAPSLKRRKDGEQVEIAKRVKVMKEI--EKQACSIIPDVNQSQRHRT-WHVAPRAVGLIKERYISERSNSEMSGP 379
cmaTERT RQYLSKSRQSKRRQRLEAVNSMNRKNTSNNIQSLG-----SAALEKQSSSAGLSATAPSLKRLKAREQLEVTAKRARLEEKER--EEQACNTAPNVNQSIPKRYGT-SCVASRSVSLIKEHYISQRSNSDMSRP 343
tguTERT RNYLLKSS-----RQRYEENVSRMRNERKNKRSLVPTDQSSAKTVSKSGNIRMVIEDQEKQSSSSSCVSATLSLKRKHREQFETPAKAKMGEKVR--EEKACSLVPNVNQSSEESSET-GVVAHSESVIKTFCISERSNSAVSGP 385
acaTERT KQHARGNRKKWHPRKRLGSKANNILEGSYQQLLIQTQKQNTV-----ASECPESKQRTSECKSLTRSLKRRKWHG-HYEMSAKRMKMKIEDGLQKETGNLVHTQSKHQLSLDGD-NAASKSSTSGFCLADQLTPTVSVLHSNE 381
xleTERT KKYLLKPKKSMSTRMLTWRNRKSGPSGLLIRSKTSMVAT-----EHSKRLKCSKDICIPIPKRRRDNLDKDDTVDHFDLPMCR-----SVSYLSNMVYKTNVQVTLTISGY 313
cmtTERT AKRAKLDTDIAKDTPRDSVSTGKTEVTRPLKRLHDEDKAESPAKKVKRDRSPGAIHPSTPPEILSAGNKMNESPENVEVSDSTSHSTRGGGLVEQKVIDAKIGVGCQKRYPOGSTKERKRTWQEGTIAGYKQAPGTDKATHPTGA 408
dreTERT VQKVAISKKRTDRNEKYISVKRRRVKETVNNNGNYRS-----LCFAISKKRAIDNEENISLKRMRMETDQVAKIRNE-----NHESQSFATSKKRARDNEENISLK 303
nfuTERT RNRCHQLKRRKPEIEDADLSKTRKQTVNK-----RKRKRETVSCSEKRRRVTHQEEGQTMSC-----EAVLDES-----TSGKSGEND 276
olaTERT KKRRSANLTKRGSVDVRESKRRRRESGV-----SARKRKEPEEESERRRRGVHHEERRQH-----SEAVLVES-----TVS-----END 274
omeTERT KNRCVSKFMKRDASAEDEKRRKRRVESSTN-----SSRRKREPEEESKRRCDTHHEESSQHAC-----SESVGEGQPTSVPEPSLTLLKTLENG 284
ecoTERT RNRCAVTVRKHKVENDKRRNRVKKRQRQ-----ADEKDEEEVMTCPKRRRVQHEHGEQVQVC-----CETMQDGE-----SGKTTLVQKQPG 264
truTERT RERCGLVNSMKRRAPFNVR-----YLRKRKTE-----DDRD-EARVCSGKRRRV-MEEDKVS-----GDDKGRKKKKLORTCRRLLKVQALLTFTQHRKLLKNSILNQ 381
spuTERT-L GEQGMROPTQRKEAENREESKEDPVLESMTIGLERSYIILNACYRTVGRITLLKHDLSKLPASNSGAMQLQHIFNSPGKYDKTISHDGKGGEGTGMQ-----GDDKGRKKKKLORTCRRLLKVQALLTFTQHRKLLKNSILNQ 381
spuTERT-S GEQGMROPTTKKEAENHRTKDDPKVLENRITGLERSYIILNACYRTVGRITLLKHNFSKLPASNSGAMQLQHIFNSPGKSDKTSADHDGKGGEGTGIQ-----GDDKGRKKKKLORTCRRLLKVQALLTFTQHRKLLKNSILNQ 381
hroTERT KHKPTKKSNDGFTKIVNAKSTSTRYGALKRSVDVDAVEP-----AKKKARCEERESEVNDGVNVNDSLSFSSGDDNNFNASN-----TKNGSGMIDDEVNAPADDSSLFAS 317
dpuTERT IENVVAILPKTSTLSVLDPRSVKRLPKKRLASD-----GQSQNVFFLVDSKSLPFIVDKTIDPKPTS-----LVFVLLKIRFQSDLSLPIPLSIE 265
hmaTERT VPNEVIRHQLIQANVADKNIRKMTFAS-----SDFKRKKLEKTEFCEPLIFNKKVSKKACG----- 229
.....310.....320.....330.....340.....350.....360.....370.....380.....390.....400.....410.....420.....430.....440.....450



hsaTERT GALSQT-----RHSHPVGRQHAGPPSTSRPPRPWDTPCPFV----- 325
ptrTERT GALSQT-----RHSHPVGRQHAGPPSTSRPPRPWDTPCPFV----- 325
mm1TERT GALSQT-----RHSHPVGRQHAGPPSTSRPPRPWDTRCFLV----- 325
cluTERT AVAASP-----AAWEGGPPGTRPTTPAWHFPYFGPGQGVPHDPA----- 309
btaTERT GDVPGP-----CRLFPGGERGVS--SASWRLSP-SEGEPPGAGA----- 313
lafTERT GEIAGR-----RRSLGLVKERGAFFSSAQPL-----SLLPQA----- 298
mmuTERT GKVSDDL-----SLG--GSVCKHKFPSS--SLLSPPRNAPFOLRE----- 329
rnoTERT GKASDF-----SLG--GSVCKHKFPSS--SLLSPPRNAPFOLRE----- 329
mauTERT VKAPGL-----SRC--GSVCYKHKFPSS--SLQSPFCQNAFOLRE----- 332
mdoTERT KSIHKEDGGEGCFIKT--KGSLSLLEHKDGLSRHNSVIRSTLKGKAKAR--SEGLCLNRGAKEADATFTHPLCPGNEPPKGLKSTSS----- 450
meuTERT KSALEEDGGREDCFIETKATKGGLSLLEHNEGDLSDCHD--SIKSTSEDIIEAK--SEEGLDGGTEQKDAIFTQPLCPGNEQPKRLRSASG----- 468
oanTERT ASEASRGLLQMQSVPGGRDRDREDSRIPSDPPFERVRGNLVRPGPRVPKTRGL--EAPSPGSGTGSAPPGWSSPARSPREESPRSGAGEQTPGRGPPG----- 432
ggaTERT SVVRRSHPGKRFPVADKSEFPQGVQGNKRKIKGAEKRAENRRGIEMYNIEHPKPNRRGIERRINPHKPELNSVQTEPEMGASGDRKQENPPAHLAKQLPN----- 483
cjaTERT SVVHRSHPGKRFPVADKSEFPQGVQGNKRKIKGAEKRAENRRGIEMYNIEHPKPNRRGIERRINPHKPELNSVQTEPEMGASGDRKQENPPAHLAKQLPN----- 482
cmaTERT SLVHNSHHGKKSVAADKSEFLQGAESNRHLKPSIEMQAGSRKRVEIHR--FIPRLDWIFIEPAESSSGHKQKQESPLAHLAEELPN----- 428
tguTERT SLVHTSCGRRKSA--VSLLRQFQSNKPLESNTQMGAESHKRVIRRM--YESQLASGQTKPVKGSK--CRQQESQPHLSKKLPTN----- 466
acaTERT CGEQISGVHVAHLDHRKEFLS--SKTMTLVSGSKACHEPSTKIDSVDR--STKQEGGIRSTQMVSAKGAARRDFP--VHNSTSS----- 461
xleTERT KKKTKTFQCCQKPVSCQKK-----TAFYSVAGDCNLSLKDNNVNLITNASVPTAQSRLSFSN----- 371
cmtTERT GGVVEKRSWHFMQVEAVFSGSVNSSENEEKVLEGRGSESKGQAKVAKRDESGKRCAPAGDKRGTAKRAASNEGDDNDFNPGRSAGKQSTKCIKAKNYSWDGLNPDGQCRAAVGVSGQAK-- 537
dreTERT RQRMEID-----QVAKIRNENHGSQSWKPADQRPFRPSQ----- 339
nfuTERT -TAFKWPSS-----ATPAAITPSEGESPSWRSGTFPPLPSSQ----- 288
olaTERT AAAVKKPP-----ETSAAPPPLEGGPSWRSGAFPPLPSSQ----- 312
omeTERT KSSLKMP-----ETSAASLPLEGEPSPWRSGTFPPLPSSQ----- 310
ecoTERT ATVSKQPA-----ETQTTTLPLEGGPSWRSGMFPPLPSSQ----- 320
truTERT ---SKKRS-----EMEATLPLEGGPSWRSGTFPPLPSSQ----- 296
spuTERT-L CPLNLPLQDGGPSPDHTNNHQEGSTGKQGRSHTKKTSLPPCAGEGASREKSLAELEESMLEGYSKPVFQRKRPKQSVLKNIQVSSVEQFDGRMEDESIVQVDDGRGGVEQRRKDDGRKSGSTKKVGEGRIDGLDRVRLGGTEERVGN 531
spuTERT-S CPLNLHPQDSPPSDHTNNHQECSTGTGLQRSHTKKTSLPPSSGECASREKSLAELEESTLEGYSKPVFQRKRPKQSVINISQVSSVEQFDGRMEER--VKIDEKNG--DSKSHPGSTKDS 501
hroTERT DNANKSQIDNNLNAASD-----QNVKRRRRKRRKKNSSTVEESQDFRAN----- 366
dpuTERT AKVPTN-----EHEHPSWKEMGKKKTRWRNKLIKQNVNRR----- 305
hmaTERT ----- 229
.....460.....470.....480.....490.....500.....510.....520.....530.....540.....550.....560.....570.....580.....590.....600



Figure S3

hsaTERT ---VAETKHFLYSS-GDKEQLRPSFLLSSLRPSLTGARRLVETIFLG-----SRPWPMPGTPTRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT----- 421
ptrTERT ---VAETKHFLYSS-GDKEQLRPSFLLSSLRPSLTGARRLVETIFLG-----SRPWPMPGTPTRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT----- 421
mm1TERT ---VAETKHFLYSS-GDKEQLRPSFLLSSLRPSLTGARRLVETIFLG-----SRPWPMPGTPTRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT----- 421
cluTERT ---HPETKRFLYCS-GGGERLRPSFLLSALPPSLGARKLVETIFLG-----SAPQKPGAARRMRRLPARYWMRPLFQELLGNHARCYPYRALLRTHCPLRMAAEGSGN----- 411
btaTERT ---CAETKRFLYCS-GGGEQLRRSFLLCSLPPSLAGARTLVETIFLD-----SKPGPPGAPRRRRLPARYWMRPLFRKLLGNHARSPYGALLRAHCPLPASAPRAGDPH----- 415
lafTERT ---VYETKRFLYCL-GAKERLPSFLLSSLOQNLGARRLVETIFLR-----TKP--AWRKTQLRRLTPRYWMRPLFQELLGNHARCYPYVLLRTHCPLRLGSAMATPAG----- 397
mmuTERT ---FIETRRFLYSRGDGOERLNSFLLSNLQPNLTGARRLVETIFLG-----SRPR--SGPLCRTHRLSRRYWMRPLFQELLVNHAECCQYVRLLRSHCHFRFTANQ----- 426
rnoTERT ---FTETRHFLYSRGGGOEELNPSFLLNSLPPSLTGAARRLVETIFLG-----SRPR--SGPFCRTRRLPARYWMRPLFQELLVNHAECCQYVRLLRSHCHFRFTANQ----- 426
mauTERT ---YTETKRFLYSRGGGERLNSFLLNNLQPNLTGARRLVETIFLG-----MRPR--SGPLCGRRRLSKRYWMRPLFQELLVNHAECCQYVRLLRSHCHFRFTAAH----- 429
mdoTERT ---SIIYINRKRFLYSAWNFRCLPTSFLLNRLHDSLGGQKLVEITIFLTSHL-FGQKGDFOQORTPWKKRRLPKRYWMRPLFKELIQNHKRCYPYFILLKKNCPRLRSAAKADPSSQLTKPQ----- 568
meuTERT ---SIVYINRKRFLYSARNFRCLPTSFLLNHLHDSLGGQRLVETIFLTSHL-FEGKGDFOQORTPWKKRRLPKRYWMRPLFKELIQNHKRCYPYFILLKKNCPRLRSAAKADPSSQLTKPQ----- 586
oanTERT ---SVPESSRAACRPGVFIDRKRLSSRDLEKRLPRSFPLNRLRGDPAGGRGLVEAIFLAGSL-REGRRDPAGRRLGRKKRRLPGRYWMRPLFQELLQNHGRCYPYVLLRKSQYVVGAAEPAGTGPPEGG----- 561
ggaTERT ---TLRSSTVYFEKKFLYS-RSYQYFFPKSFILSRLOQCAGGRRLIETIFLSQNP-LKEQQNQSLPQKWRKRLPKRYWMRPLFQELLVNHAECCQYVRLLRKNCPVLLSEAC-LKKTETLTQA----- 603
cjaTERT ---RFLRSAYVFEKKFLYS-RNYQYFFPKSFILSRLOQCAGGRRLIETIFLSQNP-VKEKQNSLPQKWRKRLPKRYWMRPLFQELLVNHAECCQYVRLLRKNCPVLLSEAC-LKKTETLTQA----- 601
cmaTERT ---RVLPSTIYIDRKLSSRYWGERPKSFLLNRLKGSAGVKKRIETIFLSQNP-FGQKRNQSLPQKWRKRLPKRYWMRPLFQELLVNHAECCQYVRLLRKNCPVLLSEAC-LKKTETLTQA----- 549
tguTERT ---RLLSAATYERKSLLSRCSFQCFPKSFVLNRLQGSQAGGRQLVEAIFLSQNP-VQQRHNSLPKHKRRKRLPKRYWMRPLFQELLVNHAECCQYVRLLRKNCPVLLSEAC-LKKTETLTQA----- 587
acaTERT ---EKSSDNTSPKRYSLLYCHROLHECLNSFVLNKLKGSFSGGQSLVEIVFFTS-Q-IPQLDSSNQSHSKRRLPKRYWMRPLFQELLQNHGRCYPYVLLRKSQYVVGAAEPAGTGPPEGG----- 582
xleTERT ---IFIDFGRLTLLSISYKKGFSSEFLLNSLDSFSGSQKLVEITIFLSN-F-LAQNDQPKRDENCRKRLPKRYWMRPLFQELLQNHGRCYPYVLLRKSQYVVGAAEPAGTGPPEGG----- 481
cmtTERT ---PSPIPADASDAATVKNVRTGSSVYVERGHIIYCN-DNRECLPSFLLNLCQGCSSGGQRLVEAIFLSSDA-FGN-NGKKQPNNYWRRKRLPKRYWMRPLFQELLVNHAECCQYVRLLRKNCPVLLSEAC-LKKTETLTQA----- 673
dreTERT ---CSIRVLMSLYNGRMKNFLNLRKLKGVGGARRMQGEDLVRMIFLQ-----SESNDSPKPKLPRFFAMVPLFSRLLRQHRKCPYRFLQRKC-----AGNDVDK----- 434
nfuTERT ---CFHTLGLFLYGRGMSGLFNKKKRSDDGQRLQKDLIRIIFFEQ-----LMFINGLERKPKKLPFRFFHMVPLFNRLQHRKCLYSRILQRICPVAEQSSVDQGE----- 391
olaTERT ---CFHTLGLFLYGRGMSGLFNKKKRSDDGQRLQKDLIRIIFFEQ-----LMFINGLERKPKKLPFRFFHMVPLFNRLQHRKCLYSRILQRICPVAEQSSVDQGE----- 391
omeTERT ---CFHTLGLFLYGRGMSGLFNKKKRSDDGQRLQKDLIRIIFFEQ-----LMFINGLERKPKKLPFRFFHMVPLFNRLQHRKCLYSRILQRICPVAEQSSVDQGE----- 391
ecoTERT ---CFHTLGLFLYGRGMSGLFNKKKRSDDGQRLQKDLIRIIFFEQ-----LMFINGLERKPKKLPFRFFHMVPLFNRLQHRKCLYSRILQRICPVAEQSSVDQGE----- 391
truTERT ---SFMRLGLFLYGRGMSGLFNKKKRSDDGQRLQKDLIRIIFFEQ-----LMFINGLERKPKKLPFRFFHMVPLFNRLQHRKCLYSRILQRICPVAEQSSVDQGE----- 399
spuTERT-L DRRKRIGEVPMVKSTNIQSTNERRSDEKNGDSISVPSQSLVSRMMDIATSSSTVGDALEQD--SIPSQPHMLRRLKNTETETVGLPSGTVSVNDDDGALTYSQKLSQPDKRLRGKTNNMRTTTRTPLIDDGVLKGSQPDRAKAR----- 679
spuTERT-S DVSSLSVSRMMDENASSSTAGDALLDDISIPSQPHMLRRLKNTETETVGLPSGTVSVNDDDGALTYSQKLSQPDKRLRGKTNNMRTTTRTPLIDDGVLKGSQPDRAKAR----- 615
hroTERT ---VVLDKITILYCH-VFTCSFPEKFKALKDEKRPVDRSMIEKILLK-----DIYLDPMANKSSTLNYPSVWIVLEKSEFEMLLKQAKFKYKVVLEKSGMKMLQKRSNRHR----- 473
dpuTERT ---AIDGSIKIADEILYSSSGWTHFPIHPIHSHSSNPFTVLAILRAVG-----TECNESEDQLRSNLRLQOLIEVMMKNHRCRYNPIVRMLNSDYDPK----- 401
hmaTERT ---WLQRNKMFSKVLINR-IHKNFIMNRVQPSNSGVYTLMDAVFHFK-----DSGRIKRLPRLIFFFTFFKKIILNFKLINMKKLLACYCPLPKWFKDIEKNEVLK----- 329



hsaTERT ---PAAGVCAREKPGQSVAAPEED-TDPRR-----LVQLLRQHSSPWQVYGFVRACLRLRVLP----- 475
ptrTERT ---PAAGVCAREKPGQSVAAPEED-TDPRR-----LVQLLRQHSSPWQVYGFVRACLRLRVLP----- 475
mm1TERT ---PAAGVCAREKPGQSVAAPEED-TDPRR-----LVQLLRQHSSPWQVYGFVRACLRLRVLP----- 475
cluTERT ---GAHRGVGICPLERP--VAAPQEQ--TDSTR-----LVQLLRQHSSPWQVYAFRACLCWLVP----- 464
btaTERT ---KCPGVGGCPSERP--AAAPQEQ--ANSGR-----LVQLLRQHSSPWQVYGLLRACLRLVPA----- 468
lafTERT ---TGGAGTGTPQPPGPAVKPAPEEDAGQC-----VQQLLRQHSSPWQVYTFVRACLHRLVP----- 453
mmuTERT --------QVTDALN-TSPFH-----LMDLLRHSSPWQVYGFVRACLCKVSA----- 465
rnoTERT --------RVPDAMD-TSPSH-----LTSLLRHSSPWQVYGFVRACLRLVPA----- 465
mauTERT --------QVAGALNTTSPQR-----LMNLLRHSSPWQVYGFVRACLRVLP----- 469
mdoTERT ---AMASSHLQAEGIGETQDQGHQGEHTSRASMSME--EEPSSSLKDQISSEKSSLS-----DAVSKKALPASHEVGK--TDKGGGDILQLLRHSSPWQVYVFLRECLHRLVPA----- 673
meuTERT ---SVASSQLKAEEVQHQSQDQGHQGEHTSRASMSME--EEPSSSLKDQISSEKSSLS-----DAVSKKALPASHEVGK--TDKGGGDILQLLRHSSPWQVYVFLRECLHRLVPA----- 698
oanTERT ---AGVSLRSAGRAGGRTASAPAGSGPEGSRRAGAVSPTASPGAGWG-----VHDLRHQSSSWRVYGFVRACLRLVPA----- 633
ggaTERT ---ALPGEAKVHKHTEH-GKE-----STEGTAPNSFLAPPSVLACGQ-----PERGEQHPAEGSDPLLRELLRHQSSHWQVYGFVRACLRLVPA----- 684
cjaTERT ---ALPGEAKVHKHTEH-GKE-----STEGTAPNSFLAPPSVLACGQ-----PERGEQHPAEGSDPLLRELLRHQSSHWQVYGFVRACLRLVPA----- 682
cmaTERT ---PLPGQAEAHKQAEGLGKEPAKRVASSRCESGHTNVPSSVRAFLAASACVE-----PGGEEQHPAEGSDPLLRELLRHQSSHWQVYGFVRACLRLVPA----- 642
tguTERT ---TLSEAEVQKQAEFGKEPAKCLTSSRCSDHTDLPDNLGAPLAESVVGEL-----PPSEENPREARDSALTLLKQHSSHWQVYGFVRACLRLVPA----- 681
acaTERT ---KVNQERRHSSQESSEANTIEYCPSSVTYGLGHFRTSGASSRCSETELGO-----KVPEEQPLDSSSTSNFRGLLQKHSSHWQVYGFVRACLRLVPA----- 676
xleTERT --------LQKNRIENDGKQLKHTTKAN-----LLSLLQHSSHWQVYGFVRACLRLVPA----- 529
cmtTERT ---SVNESNSTVTKMPCPKPSDHLNVNRTGATNLIAQTGFVLRKNLEHDTVYKNSVPGLSCLPNDLLEAETGSLQSEIPNLACQKRPFGIPAGKQVKNELKVAFDFGTGMASGSDGDLQLLKHSSPLVYRVFVRACLRLVPA----- 823
dreTERT --------MESLLKSHSSPVRVYLVFVRACLRLVPA----- 461
nfuTERT --------LNSLLPKHCAPHRVYLVFVRACLRLVPA----- 418
olaTERT --------LSSLLPQHCAPHRVYLVFVRACLRLVPA----- 442
omeTERT --------PSSLLPQHCAPHRVYLVFVRACLRLVPA----- 440
ecoTERT --------LSSLLPQHCAPHRVYLVFVRACLRLVPA----- 450
truTERT --------LSSFLPQHCAPHRVYLVFVRACLRLVPA----- 426
spuTERT-L ---KTKTGGQLPTCTSAFNDDANRGVILDSMQSQLKRMKKTDTTKAKPRMR-----LPNDAATLTKMKTDQVQVCLFLRQVLLKVVD----- 760
spuTERT-S KTKTGRQLPSDTAAPSDFPKRDETPDSMQFLKRMKKTDTTKSKPRMR-----LPNDAATLTKMKTDQVQVCLFLRQVLLKVVD----- 698
hroTERT ---SKNGAIISSNTPLNSTKN-----AKKTSLEKVVPAKKLEFLKVCINKVVI----- 520
dpuTERT --------KSFVDAGRVLFIKVCINKVVI----- 423
hmaTERT --------KFRYKLAVQSFVPEQVFLLRKIVEMLI----- 359



Figure S3

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hsaTERT  GLWGSRRHNERFLRNTKKFISL-GKHAKLSLQELTWKMSVRDCAWLRRSPG-VGCVPAAEHRLREEILAKFLHWLMS-VVVVELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----REARPAALLT  618
ptrTERT  GLWGSRRHNERFLRNTKKFISL-GKHAKLSLQELTWKMSVRDCAWLRRSPG-VGCVPAAEHRLREEILAKFLHWLMS-VVVVELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----QEARPAALLT  618
mm1TERT  GLWGSRRHNRQRFLRNTKKFISL-GKHAKLSLQELTWKMSVRDCAWLRRSPG-VGCVPAAEHRLREEILAKFLHWLMS-VVVVELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----REARPTLLA  618
clutERT  GLWGSRRHNRQRFLRNTKKFISL-GKHAKLSLQELTWKMSVRDCAWLRRSPG-VGCVPAAEHRLREEILAKFLHWLMS-VVVVELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----REARPAALLT  608
btatERT  GLWGSRRHNERFLRNVKKLLSL-GKHGRLSQELTWKMKVQDCAWLRASPG-ARCVPAAEHRLREEILAKFLHWLMS-AVVVELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----QEARPAALLT  611
lafTERT  GLWGSRRHNERFLRNVKKFISL-GKHAKLSLQELTWKMKVQDCAWLRASPG-DYAVPAAEHRLREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----QTKPSLLT  596
mmuTERT  GLWGSRRHNERFLRNVKKFISL-GKYGKLSLQELTWKMKVQDCAWLRASPG-KDRVPAAEHRLREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----QDTWLAMPT  608
rnoTERT  GLWGSRRHNERFLRNVKKFISL-GKYAKLSLQELTWKMKVQDCAWLRASPG-KDTVPAAEHRLREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----QDTWLAMPT  608
mauTERT  GLWGSRRHNRQRFLRNVKKFISL-GKYDKLSLQELTWKMKVQDCAWLRASPG-MNCVPAAEHRLREEILAKFLHWLMS-AVVVELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----QEARWAMP  612
mdoTERT  ELWGSTYNNKRRFLRNVKKFISL-GKHDKFSLRELWKMVRVDCAWLRASPG-NHFIPAEHRLREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PEARFICLA  816
meuTERT  ELWGSTYNNKRRFLRNVKKFISL-GKHDKFSLRELWKMVRVDCAWLRASPG-NHFIPAEHRLREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----LETRFICLA  841
oanTERT  ELWGSTYNNKRRFLRNVKKFISL-GKDFKSLRELWKMVRVDCAWLRASPG-KDHPVPAAEHRLREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----LSKKYPPV  776
ggaTERT  ELWGSRRHNRQRFLRNVKKFISL-GKYAKLSLQELTWKMKVQDCAWLRASPG-NHSPVPAEHCYREEILAKFLHWLMS-SVVIELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----RKKYFPPIA  827
cjaTERT  ELWGSRRHNRQRFLRNVKKFISL-GKYDKLSLQELTWKMKVQDCAWLRASPG-NHSPVPAEHCYREEILAKFLHWLMS-SVVIELLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----RKKYFPPIA  825
cmoTERT  ELWGSRRHNRQRFLRNVKKFISL-GKYAKLSLQELTWKMKVQDCAWLRASPG-NHSPVPAEHCYREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----RKKYFPPIA  785
tguTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFAKLSLQELTWKMKVQDCAWLRASPG-DHFPVPAEHCYREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----RKKYFPPIA  824
acaTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFAKLSLQELTWKMKVQDCAWLRASPG-DHFPVPAEHCYREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----RKKYFPPIA  820
xleTERT  IMWGSRRHNRQRFLRNVKKFISL-GKFAKLSLQELTWKMKVQDCAWLRASPG-DHFPVPAEHCYREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----RKKYFPPIA  673
cmtTERT  ELWGSRRHNRQRFLRNVKKFISL-GKYDRFSLSELWKMVRVDCAWLRASPG-QCSPVPAEHCYREEILAKFLHWLMS-TFVVGLLRSEFFVYVTE-TFQKNRLFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----RKKYFPPIA  966
dreTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  598
nfuTERT  GLWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  557
olaTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  582
omeTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  579
ecoTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  589
truTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  565
spuTERT-L  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  904
spuTERT-S  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  842
hroTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  654
dpuTERT  ELWGSRRHNRQRFLRNVKKFISL-GKFERLTLVLMWKMVRVDCAWLRASPG-PKKRQ---CASEHRYREWMGLQCMGWLMS-GFVGLVLRACFYATYTESMGHKTIRFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----PNS---AVT  562
hmaTERT  NFWGALHNKKYFFKSLKFLRM-GRYERCTVDYVMKNIKISLFWN---SSTNH---KQCSKRFNVIRSMFLWLYN-DFLIPVRAFFVYVTESSQKFCIFFYRKSVWSKLSIGIRQHLLKRVQLRELSEAEVRQH----LKTSECIGV  494
.....910.....920.....930.....940.....950.....960.....970.....980.....990.....1000.....1010.....1020.....1030.....1040.....1050

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hsaTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  760
ptrTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  760
mm1TERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  760
clutERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  751
btatERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  753
lafTERT  SKLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  740
mmuTERT  CLRLFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  751
rnoTERT  CLRLFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  751
mauTERT  CLRLFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  754
mdoTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  964
meuTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  920
oanTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  994
ggaTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  975
cjaTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  973
cmoTERT  SKLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  933
tguTERT  LKLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  972
acaTERT  SKLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  969
xleTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  820
cmtTERT  VALRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  114
dreTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  732
nfuTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  691
olaTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  716
omeTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  713
ecoTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  723
truTERT  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  699
spuTERT-L  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  1044
spuTERT-S  SRLRFIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  982
hroTERT  AKVRFPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  789
dpuTERT  AKVRFPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  686
hmaTERT  YDIRLIPKPDGLRPIVNMNDYVVGARTFREKR---AERLTSRVKALFVSLNYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQ-DPPPELYFVK-VDVVGAYDTIPQDRLEVIASIIKQP--NT-YCVRHYAVVQKAHGHVRKAKFK  633
.....1060.....1070.....1080.....1090.....1100.....1110.....1120.....1130.....1140.....1150.....1160.....1170.....1180.....1190.....1200

```



Figure S3

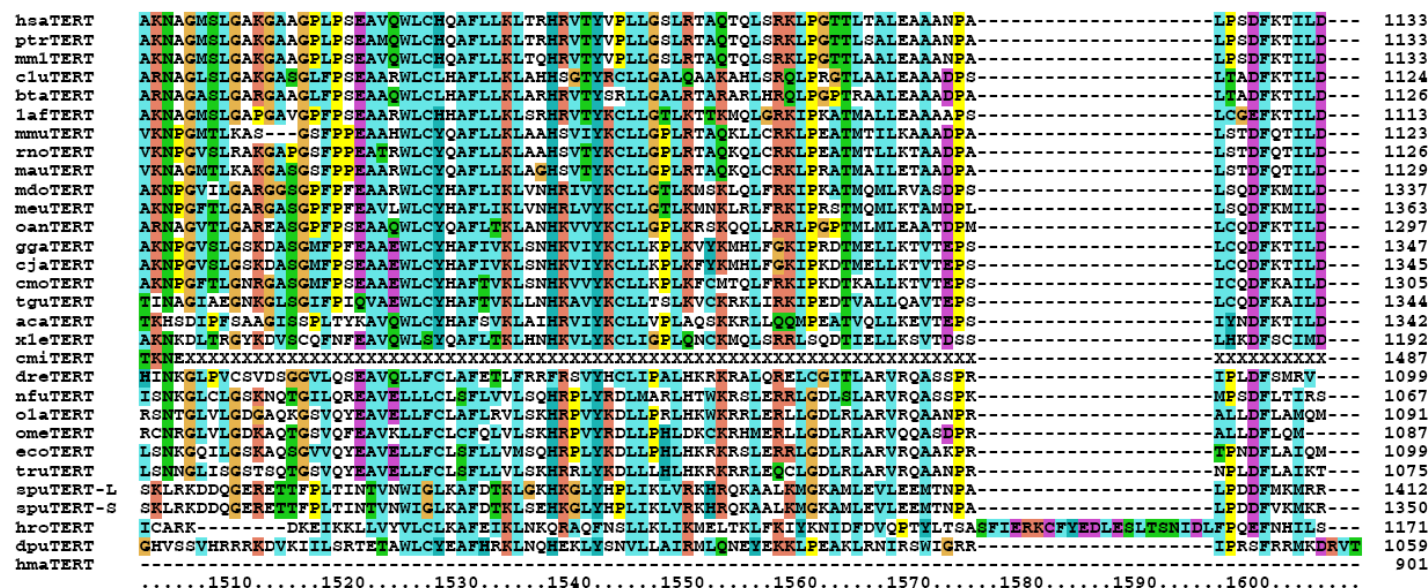


Figure S3 ClustalX sequence alignment of TERT proteins. The alignment was used for the construction of the tree shown in the Figure 2. For the abbreviations of species names see the legend to the Figure 1.