LEGENDS TO SUPPLEMENTAL FIGURES

FIG. S1. Efficiency of reverse transcription of synthetic transcripts with different UUAGGG-tract lengths. (A) UUAGGG-tract reverse transcription performed with two different *in vitro* transcripts (50 ng of each transcript per reaction). XpYp telo-350 RNA (700 bases) contains subtelomere-derived sequence (350 bases) followed by pure telomeric UUAGGG-repeats (348 bases). Telo-700 contains only pure telomeric UUAGGG-repeats (696 bases). Upon addition of dGTP, the XpYp telo-350 RT-product is chased into longer cDNAs because of the presence of subtelomeric sequence which requires dGTP for reverse transcription. (B) UUAGGG-tract reverse transcription performed using a mixture of synthetic transcripts (20 ng of each transcript per reaction) or combining each transcript (20 ng) with 1 μg of total RNA extracted from HeLa cells.

FIG. S2. Selective reverse transcription of UUAGGG-tract in absence of dGTP. RT-PCR analysis showed that transcripts corresponding to β-actin, GUSB and TERRA XpYp were undetectable when the reverse transcription was carried out in absence of dGTP, but they are reverse transcribed after the chase with dGTP.

FIG. S3. Massive telomere elongation is detected in HeLa and HLF cell lines upon long term hTR and hTERT overexpression. Genomic blot of TRFs in HeLa and HLF wt and supertelomerase (hTERT and hTR overexpressed) cell lines separated by PFGE. Telomere length was deduced by subtracting 2 kb for subtelomeric sequences from the median TRF length obtained from the gel and are as follows. HeLa: 8 kb; HeLa supertelo (hTERT/hTR): 21 kb; HLF: 6 kb; HLF supertelo (hTERT/hTR): 13 kb.

FIG. S4. Yeast Pap1 extends with similar efficiency synthetic telomeric RNA oligonucleotides ending in all six permutations of the UUAGGG sequence. 10 μM of telomeric RNA oligonucleotides (5'-UUAGGG)$_3$-3' or a permutation thereof, the 3' ends being indicated) were labeled at their 5' ends with ^{32}P and polynucleotide kinase. Polyadenylation was done as for cellular RNAs with 360 units of yeast Pap1 for 10 min at 37°C. Reaction products were purified by phenol extraction and resolved on a 12% polyacrylamide gel.

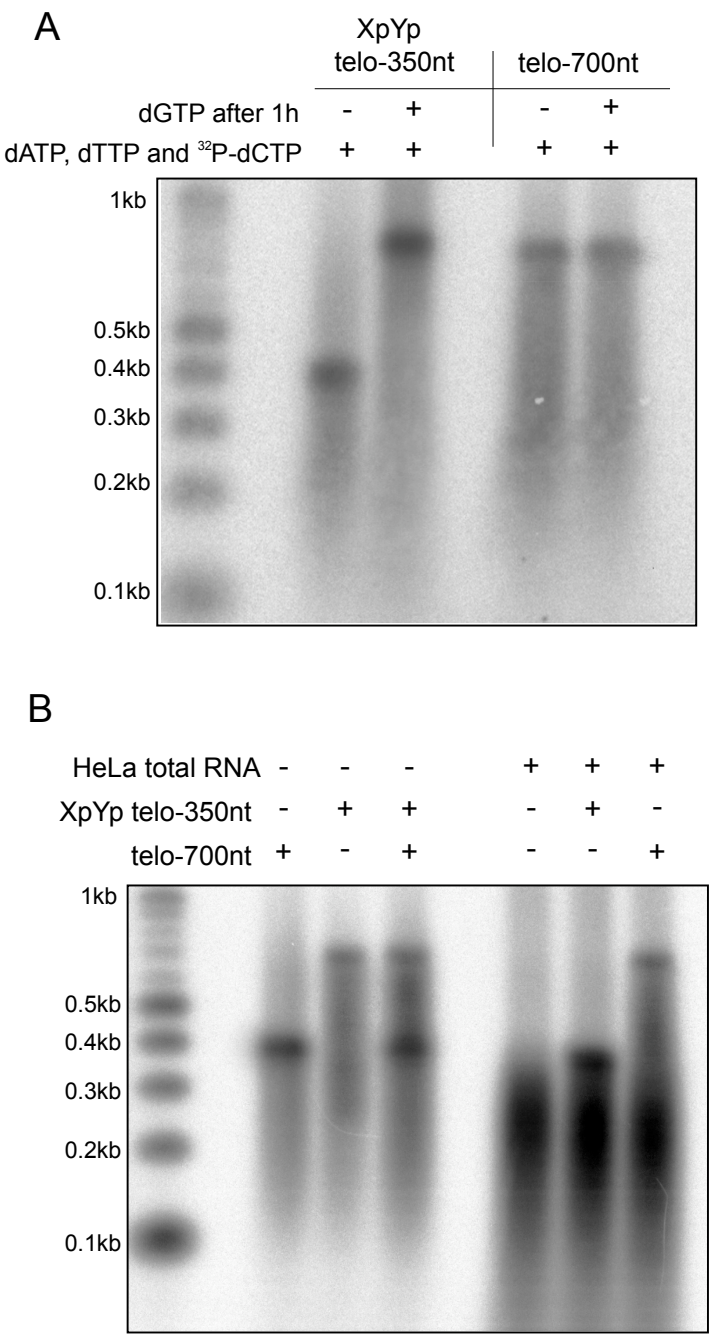
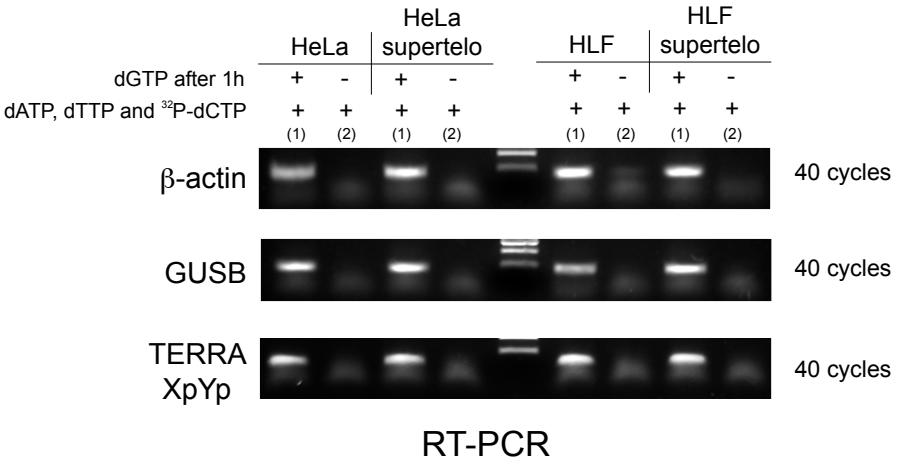

A
XpYp
telo-350nt
telo-700nt
dGTP after 1h - + - +
dATP, dTTP and 32P-dCTP + + + +
1kb
0.5kb
0.4kb
0.3kb
0.2kb
0.1kb
B
HeLa total RNA - - - + + +
XpYp telo-350nt - + + - + -
telo-700nt + - + - - +
1kb
0.5kb
0.4kb
0.3kb
0.2kb
0.1kb

Figure S1



(1) Reverse transcription with 500μM of dATP and dTTP, 5μM of unlabelled dCTP and 5μM of ^{32}P-dCTP followed by a pulse with 500μM of dGTP and 500μM dCTP.

(2) Reverse transcription with 500μM of dATP and dTTP, 5μM of unlabelled dCTP and 5μM of ^{32}P-dCTP followed with a pulse of 500μM dCTP.

Figure S2

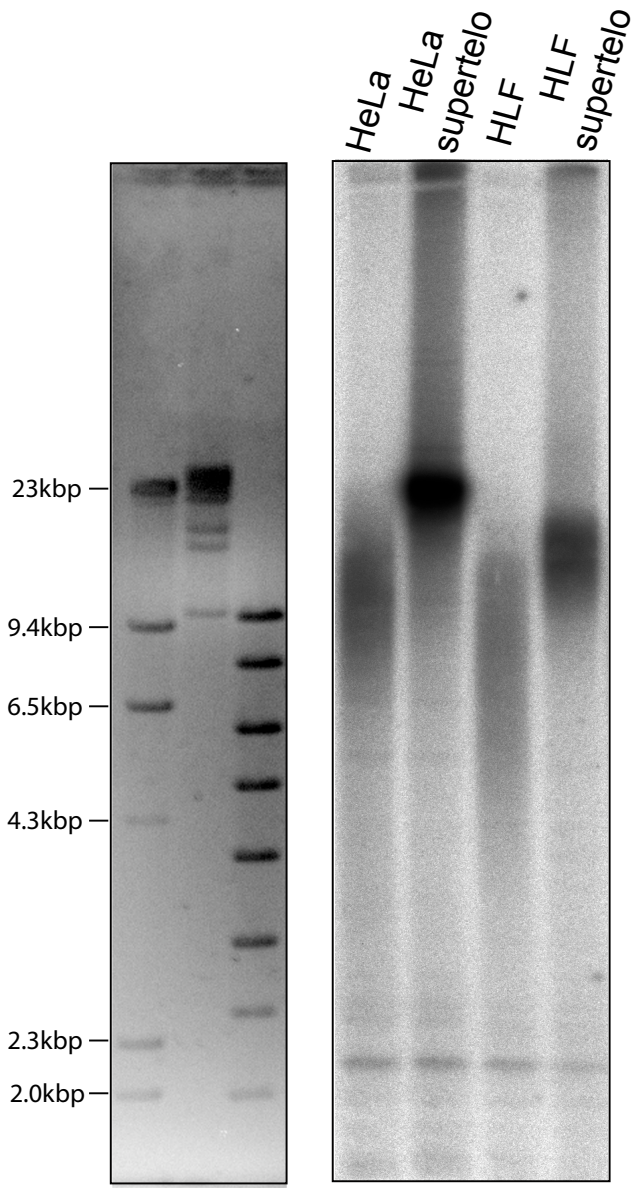

HeLa
HeLa supertelo
HLF
HLF supertelo
23kbp
9.4kbp
6.5kbp
4.3kbp
2.3kbp
2.0kbp

Figure S3

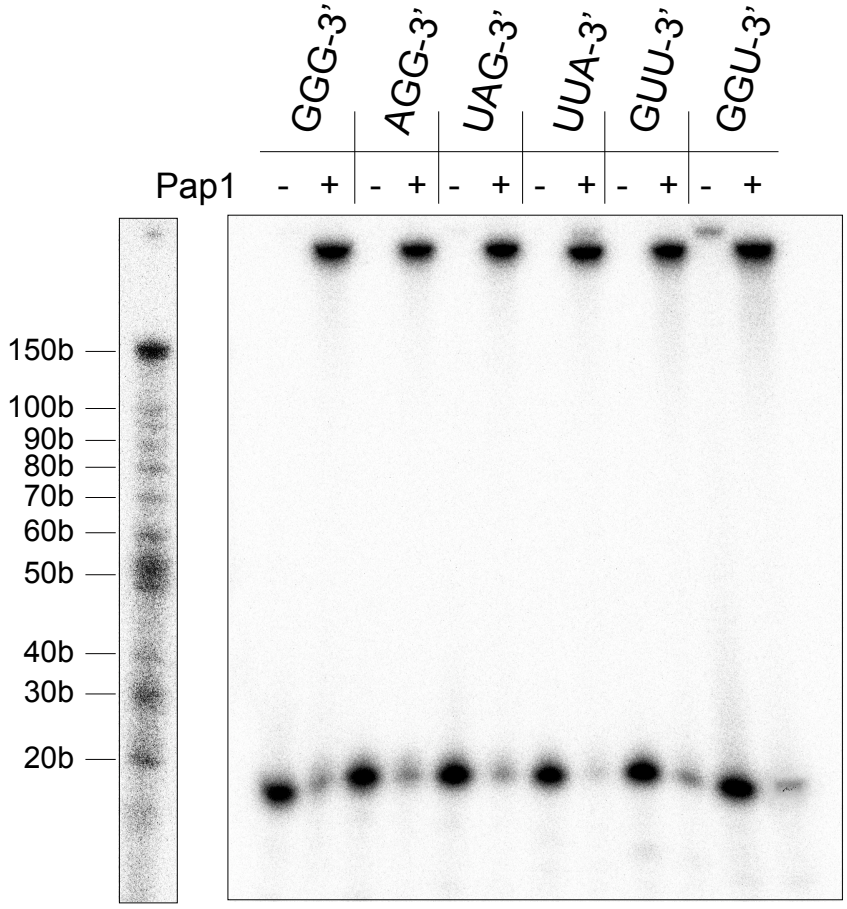

GGG-3'
AGG-3'
UAG-3'
UUA-3'
GUU-3'
GGU-3'
Pap1
- + - + - + - + - + - +
150b
100b
90b
80b
70b
60b
50b
40b
30b
20b

Figure S4

Supplemental table S1: oligonucleotides used in the reverse transcription reaction

Primer β-actin RT	5'-AGTCCGCCTAGAAGCATTTG-3'
Primer TERRA RT	5'-CCCTAACCCTAACCCTAACCCTAACCCTAA-3'
Primer eGFP RT	5'-ATGTTGCCGTCCTCCTTGAAGTCGAT-3'

Supplemental table S2: oligonucleotides used for qRT-PCR

Primer Chr 10q Forward	5'-GAATCCTGCGCACCGAGAT-3'
Primer Chr 10q Reverse	5'-CTGCACTTGAACCCTGCAATAC-3'
Primer Chr 15q Forward	5'-CAGCGAGATTCTCCCAAGCTAAG-3'
Primer Chr 15q Reverse	5'-AACCCTAACCACATGAGCAACG-3'
Primer Chr Xp/Yp Forward	5'-GCAAAGAGTGAAAGAACGAAGCTT-3'
Primer Chr Xp/Yp Reverse	5'-CCCTCTGAAAGTGGACCAATCA-3'
Primer Chr Xq/Yq Forward	5'-GGAAAGCAAAAGCCCCTCTGAATG-3'
Primer Chr Xq/Yq Reverse	5'-ACCCTCACCCTCACCCTAAGC-3'
Primer β-actin Forward	5'-TCCCTGGAGAAGAGCTACGA-3'
Primer β-actin Reverse	5'-AGCACTGTGTTGGCGTACAG-3'
Primer NEAT1 Forward	5'-CCTTCTTCCTCCCTTTAACTTATC-3'
Primer NEAT1 Reverse	5'-CTCCACCATTACCAACAATACC-3'
Primer XIST Forward	5'-GGCTTCGTCATTGTCCTTCTACC-3'
Primer XIST Reverse	5'-CACATCAGTTCACAAGTTCAAGAGTC-3'
Primer U1 snRNA Forward	5'-GGCGAGGCTTATCCATTG-3'
Primer U1 snRNA Reverse	5'-CCCACTACCACAAATTATGC-3'
Primer eGFP Forward	5'-TGACCCTGAAGTTCATCTGCACCA-3'
Primer eGFP Reverse	5'-TCTTGTAGTTGCCGTCGTCCTTGA-3'

Supplemental table S3: oligonucleotides used in UUAGGG-reverse transcription reaction

Primer oligo-dT-CCC	5'-TTTTTTTTTTTTTTTTTTTTTTCCC-3'
Primer oligo-dT-CCT	5'-TTTTTTTTTTTTTTTTTTTTTTCCT-3'
Primer oligo-dT-CTA	5'-TTTTTTTTTTTTTTTTTTTTTTCTA-3'
Primer oligo-dT-TAA	5'-TTTTTTTTTTTTTTTTTTTTTTTAA-3'
Primer oligo-dT-AAC	5'-TTTTTTTTTTTTTTTTTTTTTTAAC-3'
Primer oligo-dT-ACC	5'-TTTTTTTTTTTTTTTTTTTTTTACC-3'