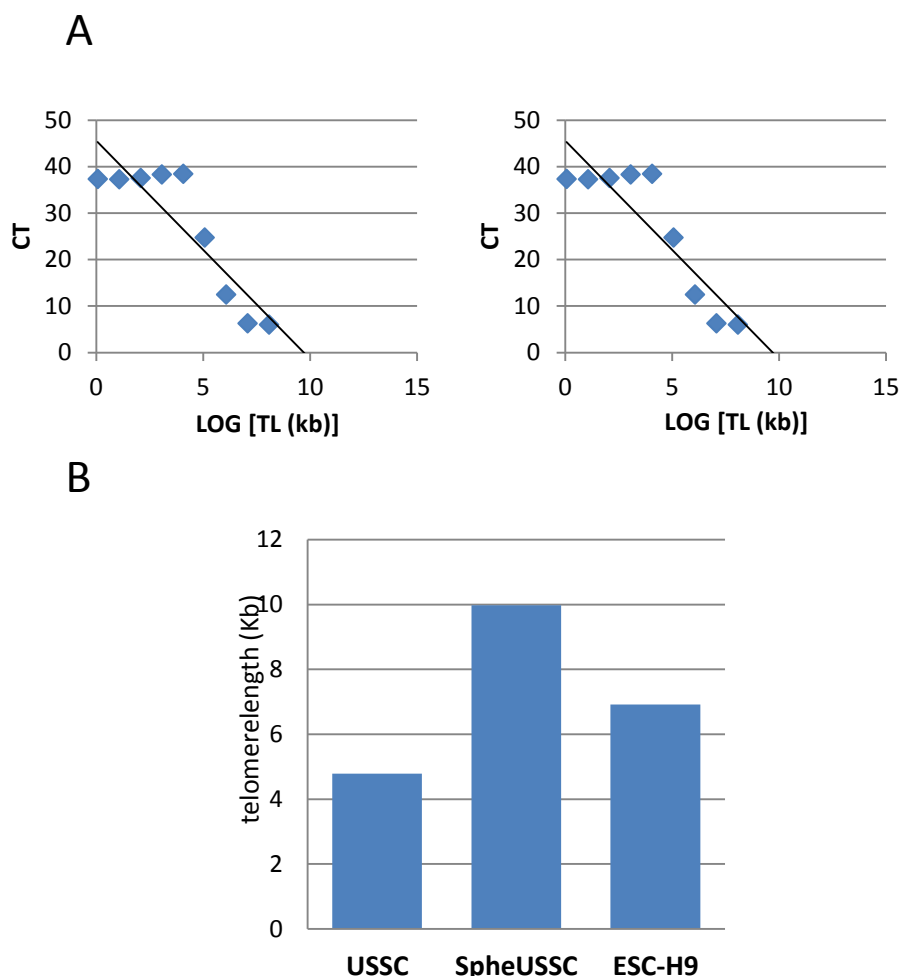


**Fig. 1.** Senescence-associated beta-galactosidase (SA- $\beta$ -gal) assay on USSC SA 8/25 cells (P6) and SpheUSSC cells (P20). Blue-dyed precipitate characteristic of senescent cells is appearing only in USSC cells (arrows) but not in SpheUSSC cells.



**Fig. 2.** Quantitative PCR measurement of absolute telomere length of USSC 8/25 and SpheUSSC cells (see O'Callaghan and Fenech, 2011).

Standard curves used to calculate absolute telomere length. CT (cycle threshold) is the number of PCR cycles for which enough SYBR green fluorescence was detected above background. A) Graph shows standard curve for calculating length of telomere sequence per reaction tube. X-axis represents amount of telomere sequence in kb per reaction. The value generated from the experimental samples utilising this standard curve was equal to kb of telomere sequence per sample. B) Graph shows standard curve for calculating genome copies using 36B4 copy number. C) Diagram shows telomere length of USSC, SpheUSSC and ESC-H9 cells.

bisulfite genomic sequencing			
	sense primer	antisense primer	
OCT4konv	gagggagagaggggttagtagttt	actccaacttctccttccaacttc	
relative transcription			
	sense primer	antisense primer	
<i>OCT4</i>	Gcccgaagagaaagcgaaccag	tgacggagacaggggaaaggc	
<i>SOX2</i>	gcggaatagcatggcgag	ccgaaccttaggagccaag	
<i>NANOG</i>	cagcttcacgttgcttctgc	ccgaccacctcatctagcccc	
<i>DNMT1</i>	cttcttcagcacaaccgtcacc	ggtgcttgccaggatgttg	
<i>hTERT</i>	agagtgtctggagcaagttgc	cgtagtcctgttcacaatcg	
<i>DLK</i>	gaccacacctgtgacccc	aggcagctcgtgcacccc	
<i>LEPTIN</i>	gccctatctttctatgtcc	tcttgaggtagcctgaag	
<i>ALPL</i>	accaaagtctcgcgccac	ccacggaggcttcagggc	
<i>GAPDH</i>	ttggaggcaaaaagctgactg	agagatatgcagtggcgtt	
telomere length			
	sense primer	antisense primer	
Telomerestandard	Ttagggtagggtagggtagggtagggtag gtagggtagggtagggtagggtagggtagggtagggtaggg		
36B4 standard	Cagcaagtgggaaggtgtaatccgtctccacagacaaggccaggactcgttg acccgttgatgataagaatggg		
teloF	gtttgggtttgggtttgggtttggg tttgggtt		
teloR	ggcttgaccttaccttaccttacct ttaccttacct		
36B4F	cagcaagtgggaaggtgtaatcc		
36B4R	ccattctatcatcaacgggtacaa		
b-globinF	gcttctgacacaactgtgttcactagc		
b-globinR	caccaacttcacccacgttcacc		
teloF	gtttgggtttgggtttgggtttggg tttgggtt		
teloR	ggcttgaccttaccttaccttacct ttaccttacct		

Table. 1. All primers used in this study