ABSTRACT

Telomeres are situated at the ends of human chromosomes; with repeating TTAGGG sequences (bases) and related proteins; which protect sticking of chromosome ends and thus from chromosomal defects. Intactness of telomeres is maintained by an enzymecalled telomerase.

Telomeres are repetitive DNA sequences at the ends of chromosomes, protecting them against incomplete replication and nuclease degradation. Telomerase is a ribonucleoprotein enzyme complex. It restores telomere sequences lost during replication by using its RNA component as a template for polymerization. It is believed that telomerase enzyme activation play a significant role in the cell immortalization and carcinogenesis. The telomerase activation leads to indefinite proliferation and immortalization therefore, it is an important step in tumourigenesis. It has been found that the human telomerase revers transcriptase (hTERT) mRNA expression is correlated with telomerase activity and is up-regulated in most pre-cancerous lesions and human cancer.

In this study, we aimed to evaluate quantitative determination of dogTERT mRNA expression and to analyze the correlation between the expression level of dogTERT mRNA and different age and race. The level of dogTERT mRNA was analyzed in 38 different ageand race dogs by Real-Time quantative RT-PCR.

The levels of dogTERT mRNA expression in group 1 (2,5-18 month) were significantly higher than group 2 (3-6 age) dogs. Our preliminary results show that real time PCR measurement of dogTERT mRNA in peripheric blood discriminatesis the first study of all about dog telomer studies.

However, a further study with long-term follow up in a larger number of patients is required to confirm the clinical application of this molecular marker.

Key words: Telomere, Telomerase, dogTERT, qRT-PCR, Dog.