**Abstract**

The stability of deoxyribo nucleic acid (DNA) depends on several factors including temperature, humidity, and period conditions. Temperature plays an essential role in DNA degradation, the high relative humidity cause rapid decay of DNA. The aim of this study is to assess the effects of different conditions (Temperature and Humidity) on DNA quantitative and methylation by bisulfite. The study has investigated 60 samples of blood that have been collected from healthy people. The samples were distributed for four groups each group has 15 samples were exposed at different conditions temperature (0°C,20°C,40°C,55°C) and humidity (58%,68%,25%,12%) in different time ( 0,1,2,4 and 8 days). The results have been obtained from real time PCR that showed the best results of DNA quantity was exposed at 20°C and 40°C. The results showed that the DNA quantity at a temperature of 0°C of blood samples were high and started to degrade in 2,4, and 8 days. In contrast, the result showed that when the temperature was raised to 55°C, the DNA started to degrade at 1 day. The results clearly showed that DNA is extremely sensitive to heat. The DNA methylation of TRIM 59 gene was stable in room temperature whereas in the 0°C and 55°C the results showed that a slight regression in TRIM59 gene.