

APPLE EXTRACT PREVENT DNA DAMAGE ON HUMAN FIBROBLASTS

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Comet assay is used to quantify DNA damage induced by several factors. This technique allows the assessment of genotoxic and also the DNA protective capability of some bioactive compounds. The aim of this study was to evaluate the capability of apple extracts on protect DNA from induced damage in cultured human fibroblasts. Human fibroblasts were incubated for a period of 48 hours with two non-cytotoxic concentrations (0.005 and 0.01% (w/v) of apple extract determined previously by MTT technique. According to the results, DNA damage was observed in human fibroblasts incubated for 48 hours with apple extract at concentrations of 0.01 and 0.005% (w/v). However, these data were statistically different when compared with the control group (Control: 78.33 ± 2.52 , 0.01% (w/v): 67.67 ± 3.51 , 0.005% (w/v): 69.33 ± 1.53 -Score Comet, $P < 0.01$ and $P < 0.05$ vs control, respectively), what means that the extract is not genotoxic. Moreover, the greater presence of comets Class 1 and 2 and the lower count comets Class 3 and 4 in cells receiving the apple extract can be considered that it has the potential to exert protective effects against stimuli that cause damage to the cells genetic material. In conclusion, cell cultures treated with apple extract differ in the formation of DNA damage when compared to the control group, reducing comets formation. Apple extract has no capacity to cause DNA damage, since it maintained the integrity of the genetic material and can be considered not genotoxic. Apple extract has the potential to exert protective effects against stimuli that cause damage to cellular DNA.