

# Effects of Some Boron Compounds on Peripheral Human Blood

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Peripheral blood cultures were exposed to various doses (5 to 500 mg/L) of boron compounds. Sister-chromatid exchange, micronucleus and chromosomal aberration tests were applied to estimate the DNA damage, and biochemical parameters (superoxide dismutase, catalase, glutathione peroxidase, glutathione-*S*-transferase, glucose-6-phosphate dehydrogenase, total glutathione, malondialdehyde and total antioxidant capacity) were examined to determine oxidative stress. According to our findings, various boron compounds at low doses were useful in supporting antioxidant enzyme activities in human blood cultures. It was found that the boron compounds do not have genotoxic effects even in the highest concentrations, though in increasing doses they constitute oxidative stress. It is concluded that the tested boron compounds can be used safely, but it is necessary to consider the tissue damages which are likely to appear depending on the oxidative stress.

*Key words:* Boron Compounds, Genotoxicity, Oxidative Stress