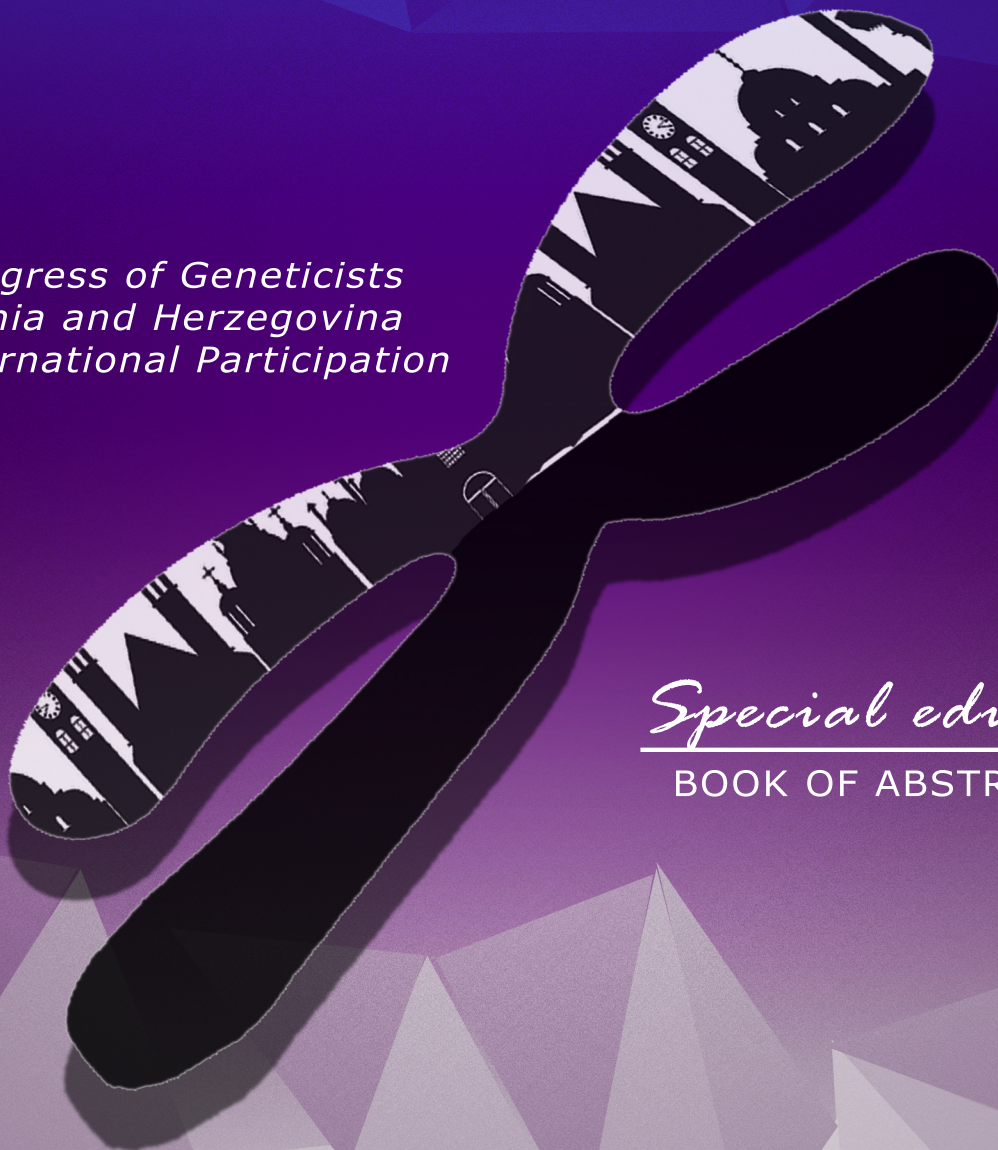


# Genetics & Applications

An Aspiring Interdisciplinary Journal of Genetic Research

Vol. 3, No. 2  
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*1<sup>st</sup> Congress of Geneticists  
in Bosnia and Herzegovina  
with International Participation*



*Special edition*  
BOOK OF ABSTRACTS



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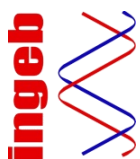
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**ANTIGENOTOXIC EFFECT OF QUERCETIN ON THYROXINE-INDUCED DNA DAMAGE IN HUMAN WHOLE BLOOD CELLS *IN VITRO***

Dijana Topalović, Lada Živković, Marija Bruić, Biljana Spremo-Potparević

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The binding of thyroid hormones to specific nuclear receptors in target cells induces synthesis of enzymes associated with redox processes, leading to the formation of reactive oxygen species (ROS), which can cause damage of DNA molecule. Quercetin has already been shown to have protective effect against DNA damage, with its most pronounced feature being scavenging of free radicals. The aim of this study was to evaluate antigenotoxic potential of quercetin against thyroxine-induced DNA damage in human whole blood cells by using the comet assay. For that purpose, cells were exposed to 50  $\mu\text{M}$  thyroxine and separately pre-treated or post treated with 500  $\mu\text{M}$  of quercetin. Results showed that DNA damage was significantly reduced in cells pre-treated with this scavenger of free radicals. Obtained results indicate the ability of thyroxine to be a mediator of DNA damage and that quercetin displayed protective effect against thyroxine-induced genotoxicity.

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