SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION

PRECLINICAL TESTING OF ACTIVE SUBSTANCES AND CANCER RESEARCH

WITH INTERNATIONAL SYMPOSIUM ON ANTI-CANCER AGENTS, CARDIOTOXICITY AND NEUROTOXICITY

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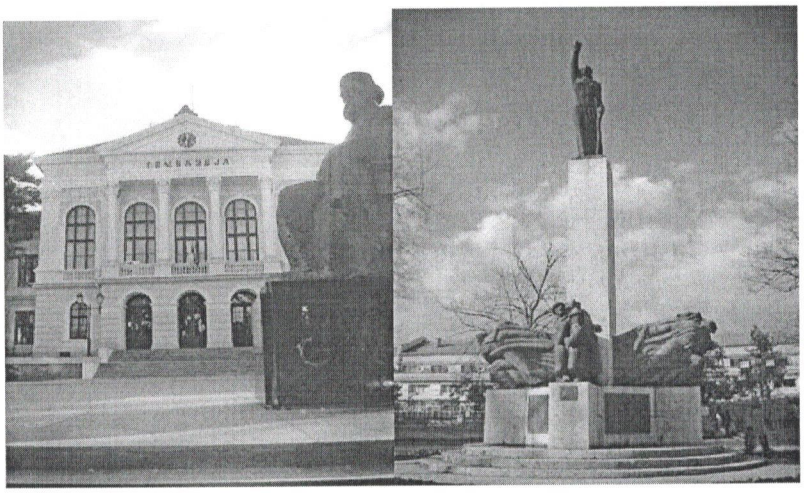
CENTRE FOR PRE-CLINICAL TESTING OF ACTIVE SUBSTANCES – CPCTAS
FACULTY OF SCIENCE UNIVERSITY OF KRAGUJEVAC
FACULTY OF MEDICINE UNIVERSITY OF KRAGUJEVAC
SERBIAN PHYSIOLOGICAL SOCIETY

Under the auspice of

EU 7th Framework Program (FP)



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ABSTRACT BOOK

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MARCH 16-18, 2011, KRAGUJEVAC, SERBIA

ABSTRACT BOOK

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P22 CYTOTOXIC EFFECTS OF GLASS IONOMER CEMENTS ON HUMAN PULP DERIVED MESENCHYMAL STEM CELLS

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Objectives: Glass ionomer cements (GICs) are commonly used in restorative dentistry. Responses to GICs differ among cell types and it is of importance to thoroughly investigate the influence of these restorative materials on pulp stem cells that are potential source for dental tissue regeneration. We compared the cytotoxicity of eight biomaterials: Fuji I, Fuji II, Fuji VIII, Fuji IX, Fuji Plus, Fuji Triage, Vitrebond and composit on pulp derived mesenchymal stem cells (MSCs).
Methods: Elution samples of biomaterials were prepared in sterile tissue culture medium and the medium was tested for toxicity in a cell culture system by using an assay of cell viability *in vitro* (MTT test) and Annexin V FITC Detection Kit (flow cytometry apoptotic assay).
Results: The results showed that the eluates from GICs were cytotoxic to human pulp derived MSCs. The most toxic materials appeared to be Fuji Plus, Vitrebond, Fuji VIII, Fuji IX and Fuji II while the less toxic appeared to be Fuji I, Fuji Triage and composit. Fluoride release correlates with cytotoxicity of GICs, while Aluminium and Strontium ions, present in significant amount in eluates of tested GICs, were not responsible for their cytotoxic effects.
Significance: The most important conclusion of our study is that tested GICs, particularly Fuji Plus, Vitrebond, Fuji VIII, Fuji IX and Fuji II, due to their cytotoxic effects on pulp MSCs, would not appear to be desirable materials for placement in direct contact with pulp tissue.