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**XIV МЕЂУНАРОДНИ НАУЧНИ СКУП
САВРЕМЕНИ МАТЕРИЈАЛИ 2021**

**ПРОГРАМ РАДА И
КЊИГА АПСТРАКАТА**

**XIV INTERNATIONAL SCIENTIFIC CONFERENCE
CONTEMPORARY MATERIALS 2021**

**PROGRAMME AND
THE BOOK OF ABSTRACTS**

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ОРГАНИЗАТОР НАУЧНОГ СКУПА
Академија наука и умјетности Републике Српске

СУОРГАНИЗАТОРИ
Alma Mater Europaea
Технички универзитет Габрово

ПОКРОВИТЕЉ НАУЧНОГ СКУПА
*Министарство за научнотехнолошки развој,
високо образовање и информационо друштво*

ОДРЖАВАЊЕ СКУПА СУ ПОМОГЛИ
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PROLONGED EXPOSURE TO MESOPOROUS SILICA DECREASE CELL VIABILITY *IN VITRO*

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Abstract: Ordered mesoporous silica SBA-15 structure with high specific surface area enables large pharmaceutical adsorption capacities and promotes its application as a carrier in drug formulations of prolonged-release. The aim of the study was to estimate SBA-15 time and concentration impact on human peripheral blood mononuclear cells viability, as well as cellular morphology and DNA fragmentation in vitro. SBA-15 mesoporous silica treatment impact on cell viability was monitored at 24, 48 and 72 h time points by TB assay, while at the end of the treatment DNA fragmentation was assessed by colorimetric assay and cellular morphology by dual TMRE/DAPI fluorescent staining. SBA-15 cytotoxic potential rises dependently on time and concentration exposure. After 72 h, all tested concentrations were cytotoxic and displayed elevated DNA fragmentation corresponding to a high level of apoptotic and necrotic cells, as shown by dual fluorescent staining. Short term exposure to SBA-15 material or chemical modification that could influence its physicochemical properties could be a way to lower its toxicity.

Key words: SBA-15, cytotoxicity, DNA fragmentation, TMRE staining.

THE IMPORTANCE OF THERMAL COMFORT OF THE URBAN ENVIRONMENT DURING SPATIAL PLANNING AND CONSTRUCTION

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