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Gold Nanoparticles effect on Human Dermal Fibroblast TATSIANA MIRONAVA, NADINE PERNODET, MIRIAM RAFAILOVICH, SUNY at Stony Brook, MATERIAL SCIENCE AND ENGINEERING DEPARTMENT TEAM — Recently many researchers brought to the light the fact that due to high surface/bulk ratio nanoparticles can penetrate unusually deep human organs and cause health problems. Gold nanoparticles are widely used nowadays, however, their effects on cells are still under investigation. Here, we studied the effect of inert citrate/gold nanoparticles as a function of size (13 nm and 45 nm), concentration and time exposure (from 1 to 6 days) on human dermal fibroblasts, since skin is one of the major routes to exposure to nanoparticles. We measured apoptosis rate as a function of nanoparticles size, time exposure and concentration. We found that the presence of 45-nm gold particles had more severe effects on these cells when compared to 13-nm nanoparticles, as the nanoparticles entry use 2 different pathways. In addition the question of cells recovery as a function of time exposure and concentration was investigated.

Tatsiana Mironava
SUNY at Stony Brook

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