

عنوان مقاله:

In vitro Cytotoxicity of Silver Nanoparticles Incorporated in a Soft Silicone Liner

محل انتشار:

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خلاصه مقاله:

Introduction: Silver nanoparticles (SNPs) have recently been suggested to increase the antimicrobial properties of soft liner materials. However, their safety remains a matter of debate. This study aimed to evaluate the cytotoxicity of Mucopren® soft silicone liner material (Mucopren; Kettenbach, Germany) incorporated in SNPs. Methods: The SNPs with over 98% purity were added to Mucopren in 0.5, 1, 2, and 3 weight percentage (wt%) concentrations and manually homogenized. The mixture of the pieces of Mucopren plus SNPs and SNPs alone were placed in 96-well plates containing Dulbecco's Modified Eagle Medium culture, FBS, and antibiotics with L929 fibroblasts. Cell viability and biocompatibility were determined after 1, 2, and 3 days of incubation using the methylthiazol tetrazolium assay. Optical density was read by an ELISA reader at 570 nm and compared to those of positive and negative controls. Results: Among Mucopren mixed with different SNPs concentration, the cell toxicity had no significant difference in the same days, and cell toxicity decreased over time ($P=0.016$). The SNPs alone were less cytotoxic than Mucopren incorporated SNP samples ($P> 0.05$). Conclusion: Within the limitations of this study, the addition of 0.5, 1, 2, and 3wt% concentrations of SNPs to Mucopren did not cause a significant change in its cell toxicity in an in vitro condition

کلمات کلیدی:

Cytotoxicity, Nanoparticle, Silver, Soft Liner

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