Synopsis of Original Research Paper

Effect of Photocatalytic Reaction on the Biocompatibility of UV Absorbent Titania

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Antimicrobial activity and the biocompatibility of titania were investigated using glass plates and beads coated with the photocatalyst. The activity of photocatalyst was stepwise regulated by the thickness of titania layer on the surface of soda-lime glass plates. Time-dependent growth profiles of E. coli cultured on the glass plates showed that the viability decreased due to the photocatalytic reaction induced by UV radiation. On the other hand, the UV absorption by titania powder was found to be effective on decreasing the damages for microbial cells. Similarly, the medium components including serum proteins for tissue culture of epithelial cell line were effective on protecting cells from the damages by UV radiation. These results suggested that the UV absorbent reaction is effective on protection of cells rather than damaging by the photocatalytic reaction.