

**INTERACTIONS BETWEEN COTTON DENIM FABRIC COATED WITH ANTIMICROBIAL FINISHES
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Antimicrobial finishes are been used in textile market from long time. This coated textile fabrics have wide range of applications in defense and civilian sector. In hospitals these coated fibers are used to mitigate the effect of microbes due to cross contamination. The different type of finishes currently available market are Oxidizing agents like aldehydes and halogens, Quaternary ammonium compounds, metallic compounds like cadmium, silver, natural antimicrobial agents like chitosan and Neem. Each group of these antimicrobial finishes has different set of characters and different mode of actions against microbes.

But little is done to know the toxicity of these chemicals on the human, the end user. In our research project we are trying to work in this direction. We are trying to understand if there is any toxic effect of these coated finishes denim fabrics on human epidermis as epidermis is in direct contact with these coated fabrics. We are using Hs733Sk cell lines for testing toxicity on skin. We are also interested in knowing toxicity concentrations and IC50 of these antimicrobial finishes on dermal skin cell lines. These toxicity concentrations values are important as they are the limiting factor to the amount of antimicrobial finishes that can be coated on the denim fabric irrespective of whatever concentrations that can mitigate the growth of microbes. Our experimental results can help to suggest the upper limit of concentrations of antimicrobials finishes that can be used to mitigate the effect of microbes and show no toxic effect on humans, the end user.