Research Diary

Further, we want to genetically engineer these chimeric nanoparticles carrying antigens of SARS-CoV2 virus in E. coli bacteria which will be used as a factory to produce the antigenic protein nanoparticles. Finally, we plan to take the snapshots of chimeric nanoparticles using transmission electron microscopy to know whether these nanoparticles assembled correctly and also whether the antigen of SARS-CoV2 virus got stably assembled on the nanoparticle.

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Developing Smart accessories for control and mitigation of infectious organisms

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A commercially available polymer has been engineered under specific conditions to obtain a particular phase that could be of potential use to control and mitigate infectious bio-organisms under small DC-voltages. The proof of concept clearly shows that it works very well for Staphylococcus aureus a commensal bacteria that affects the upper respiratory tract and skin. The testing of these polymers for their antiviral characteristics using non-pathogenic viral strains are under progress. Further, the films will be potentially tested for their activity against COVID-19 in collaboration with CSIR-CCMB, Hyderabad. The processing used in this work is scalable and suitable for large scale production. This could potentially be used as a personal protective accessory for the frontline health care workers and for patients to prevent/control the spread of infectious organisms. These films could also be used in air purifiers, ACs etc. to mitigate viral load in quarantine zones/isolation wards.

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