

Supplementary Information

Cutting-edge biomaterials for advanced biomedical uses: Self-gelation of L-arginine-loaded chitosan/PVA/vanillin hydrogel for accelerating topical wound healing and skin regeneration

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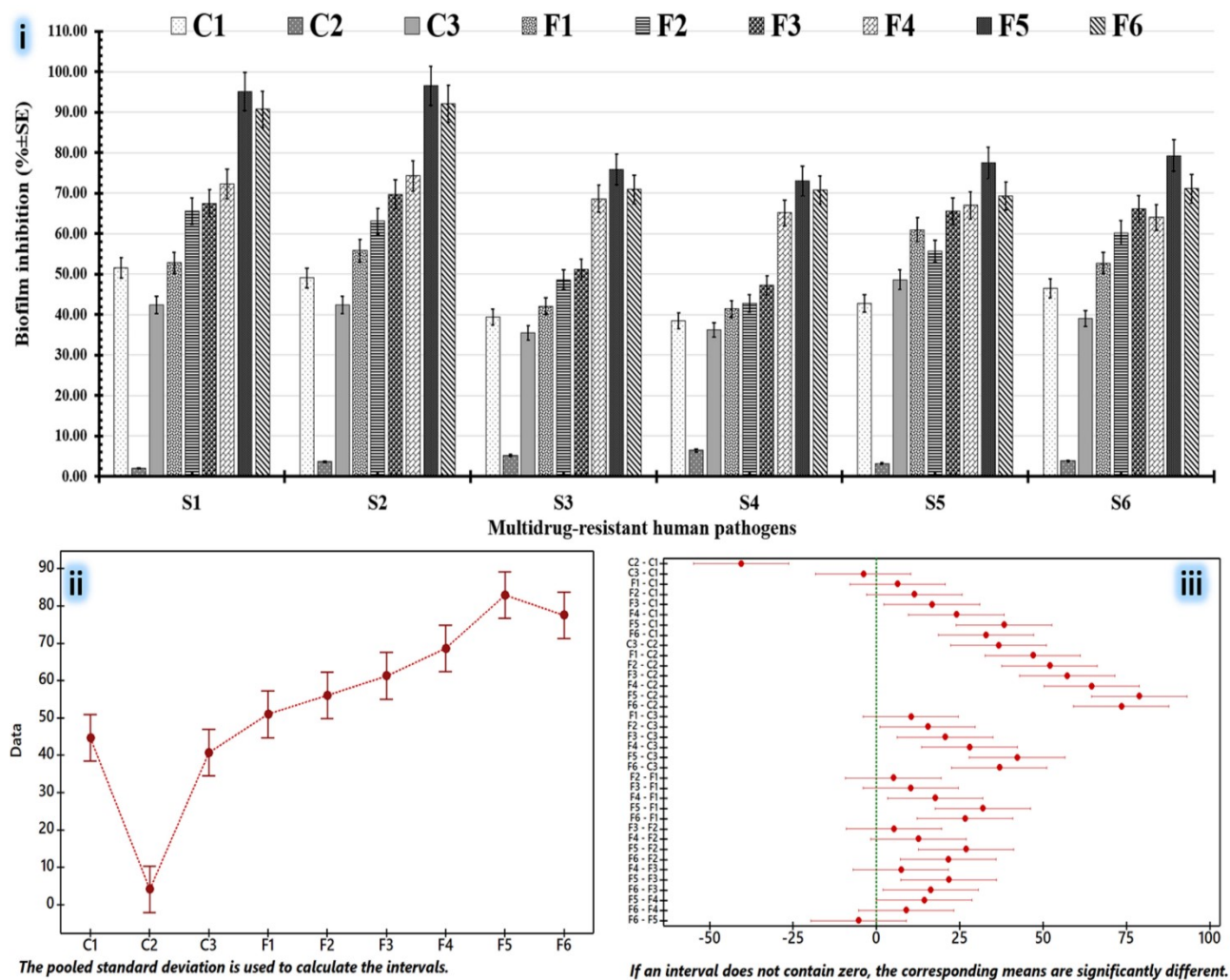


Fig. 1S Biofilm inhibition analysis consisting of the percentages of biofilm inhibition charts (i), interval plot (ii), and simultaneous Tukey tests for mean difference (iii) for tested hydrogels against **S1: *Staphylococcus aureus***, **S2: *Bacillus cereus***, **S3: *Salmonella paratyphi***, **S4: *Escherichia coli***, **S5: *Candida glabrata***, and **S6: *Candida albicans***. The tested hydrogels coded as **F1-hydrogel** (1% chitosan, 1% vanillin, and 0% L-arginine), **F2-hydrogel** (1% chitosan, 1% vanillin, and 0.125% L-arginine), **F3-hydrogel** (1% chitosan, 1% vanillin, and 0.25% L-arginine), **F4-hydrogel** (1% chitosan, 1% vanillin, and 0.5% L-arginine), **F5-hydrogel** (1% chitosan, 1% vanillin, and 0.75% L-arginine), and **F6-hydrogel** (1% chitosan, 1% vanillin, and 1% L-arginine), with a control group; **C1**(1% L-arginine), **C2** (1% chitosan), and **C3** (1% vanillin).

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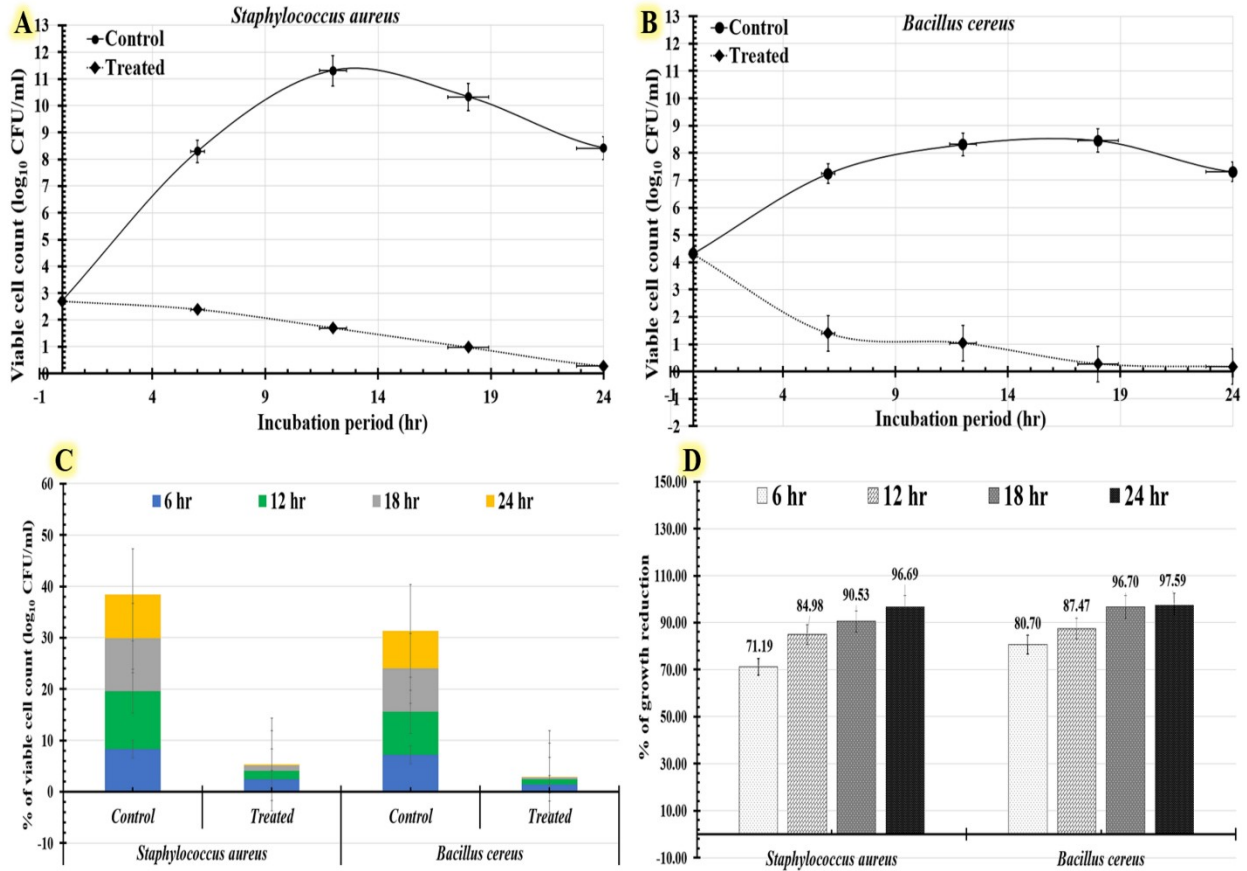


Fig. 2S Time-kill kinetic analysis for the selected **F5-hydrogel**. The growth curve of F5-treated *Staphylococcus aureus* (A), and *Bacillus cereus* (B) with their controls (free of F5-hydrogel) were plotted using cell viability (log₁₀CFU/mL) vs incubation periods. (C): Stacked bar graph comparing the percentage of cell viability in our treated and untreated microbial cells at various stages of their cell life cycle. (D): Percentage of growth reduction in the cell viability of F5-treated *Staphylococcus aureus* and *Bacillus cereus* via the period of incubation.