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1 **Evaluation of Dose Dependent Antimicrobial Activity of Self-Assembled Chitosan, Nano**
2 **Silver and Chitosan-Nano Silver Composite against Several Pathogens**

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11 **Abstract:**

12 The aim of this investigation to preparation of silver nanoparticles organized chitosan nano polymer,
13 which effective against microbial and pathogens, when apply to liquid medium and edible food
14 products surface, will rescue the growth of microbes. Self-assembly approach used to synthesis of
15 silver nanoparticles and silver nanoparticles organized chitosan nano polymer. Silver nanoparticles and
16 silver nanoparticles organized chitosan nano polymer and film characterized using Ultra-violet visible
17 spectrometer (UV-vis), X-ray diffraction (X-ray), and Scanning electronic microscope (SEM). The
18 crystalline structured protein capped nano silver successfully synthesized at range of 12nm – 29nm and
19 organized into chitosan nano polymer. Antimicrobial ingredient in liquid medium and food product
20 surface provide to rescue oxidative change and growth of microorganism to provide higher safety. The
21 silver nanoparticles organized chitosan nano polymer caused the death of microorganism. The
22 materials in nano scale synthesized successfully using self-assembly method, which showed good
23 antimicrobial properties.

24 **Key words:** Self-assembly; Silver nanoparticles organized chitosan; Antimicrobial agent; Food
25 preservative

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