Fig. S1

**Fig. S1** The photograph of the minimal inhibitory concentration (MIC) for (a) Gram-negative (*E. coli*) and (b) Gram-positive (*S. aureus*) bacteria, respectively. The observed MIC was 3 ml for *E. coli* and 1.5 ml for *S. aureus*.

The minimal inhibitory concentration (MIC) was determined by observing the growth of microorganism after overnight incubation (37°C).
Fig. S2 (a-d): The FESEM images of E. coli bacteria treated with CTS nanoparticles. The cellular structural changes such as shriveled cell texture (a), incomplete cell division (b), extruded intracellular fluids (c) and increased cell length (d) indicate the antibacterial activity of CTS nanoparticles.
Fig. S3 (a-d): The FESEM images of *S. aureus* bacteria treated with CTS nanoparticles. The cellular structural changes such as extruded intracellular fluids (a), intricate shaped cells (b), shriveled cell texture (c) and increased cell size (d) indicate the antibacterial activity of CTS nanoparticles.