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Simple sonochemical fabrication of CaO nanoparticles, characterization and antibacterial effects

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Simple sonochemical method was used for synthesis of nano sized particles of Calcium Oxide (CaO) in ethylene glycole solution in the presence of Tirtion X-100 as a surfactant. Nanoparticles of precipitate of $\text{Ca}(\text{OH})_2$ was formed by the addition of NaOH slowly to the calcium ion solution under ultrasonic radiation for 30 minutes, then followed by calcination for 550°C . The formed nanoparticles were characterized by SEM, XRD, Uv-Vis, and FTIR spectroscopy. It was observed that the size of the nanoparticles was around 30-50 nm. The lethal effects of nanocrystalline CaO were evaluated on *Lactobacillus plantarum*. At a concentration of 100 ppm, the killing effect of MgO was close to 1 log reduction for *L. plantarum* after 24 h exposure.

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