Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

Infrared microspectroscopy studies on the protective effect of curcumin coated gold nanoparticles against H_2O_2-induced oxidative stress in human neuroblastoma SK-N-SH Cells

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Figure S1: The photograph and UV-Vis absorption spectra of curcumin coated gold nanoparticles (Cur-GNPs) and citrate coated gold nanoparticles (Cit-GNPs). The spectra have been acquired over 90 days' time span to study the stability of the Cur-GNPs solution.

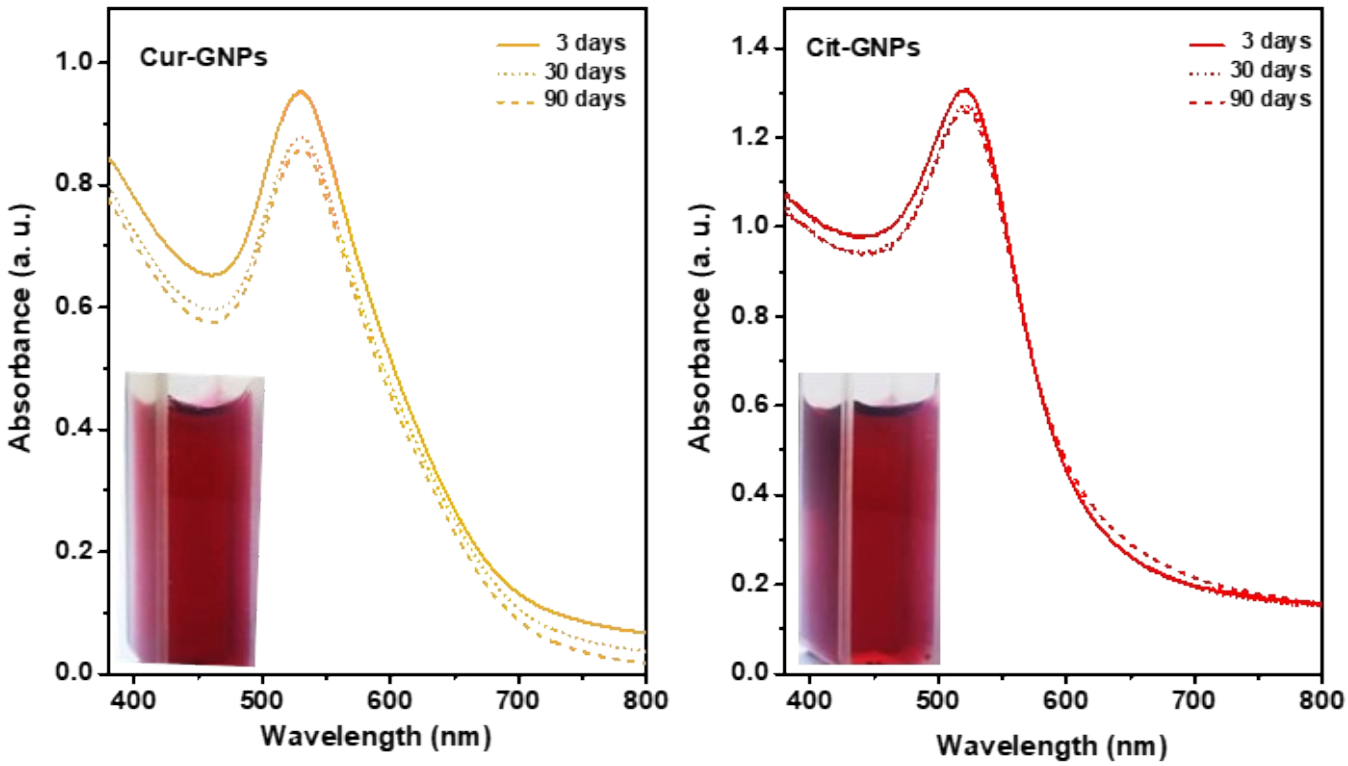

Figure S2: The stability of nanoparticles and their toxicity on SK-N-SH cells were evaluated for 24, 48, and 72 h using optical microscopy. The top row images show that the morphology of the cells remained unchanged even following 72 h of treatment; this confirms that nanoparticles have no toxicity on cells, and also they are very stable. In the post-treatment group (middle row), the morphology of the cells in the Cur-GNPs treated cells show that the nanoparticles have reduced the effect of H_2O_2 and protected the cells against ROS produced. Hydrogen peroxide completely has affected the cells in the H_2O_2 sample and has produced damage to the cells. In the pretreatment group (bottom pictures), in the Cur-GNPs sample, the nanoparticles eliminated the effect of H_2O_2, while the cells of the H_2O_2-treated sample were lack this antioxidant weapon for defending against hydrogen peroxide. (The concentration of H_2O_2 in the pre-and post-treatment groups was that of IC50 as found from MTT data.)

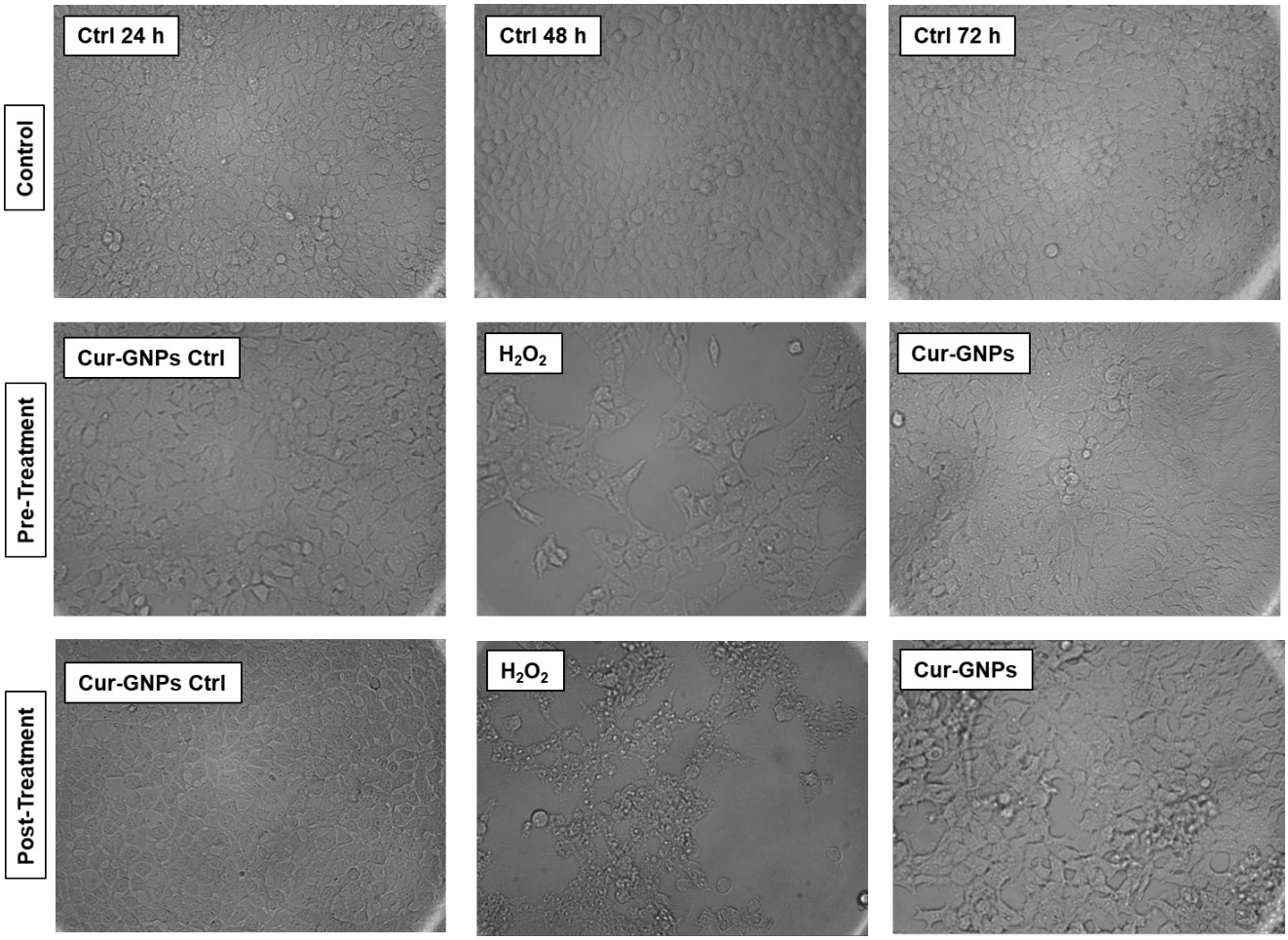

Figure S3: Raw FTIR spectra of the cells in the post-treatment group.

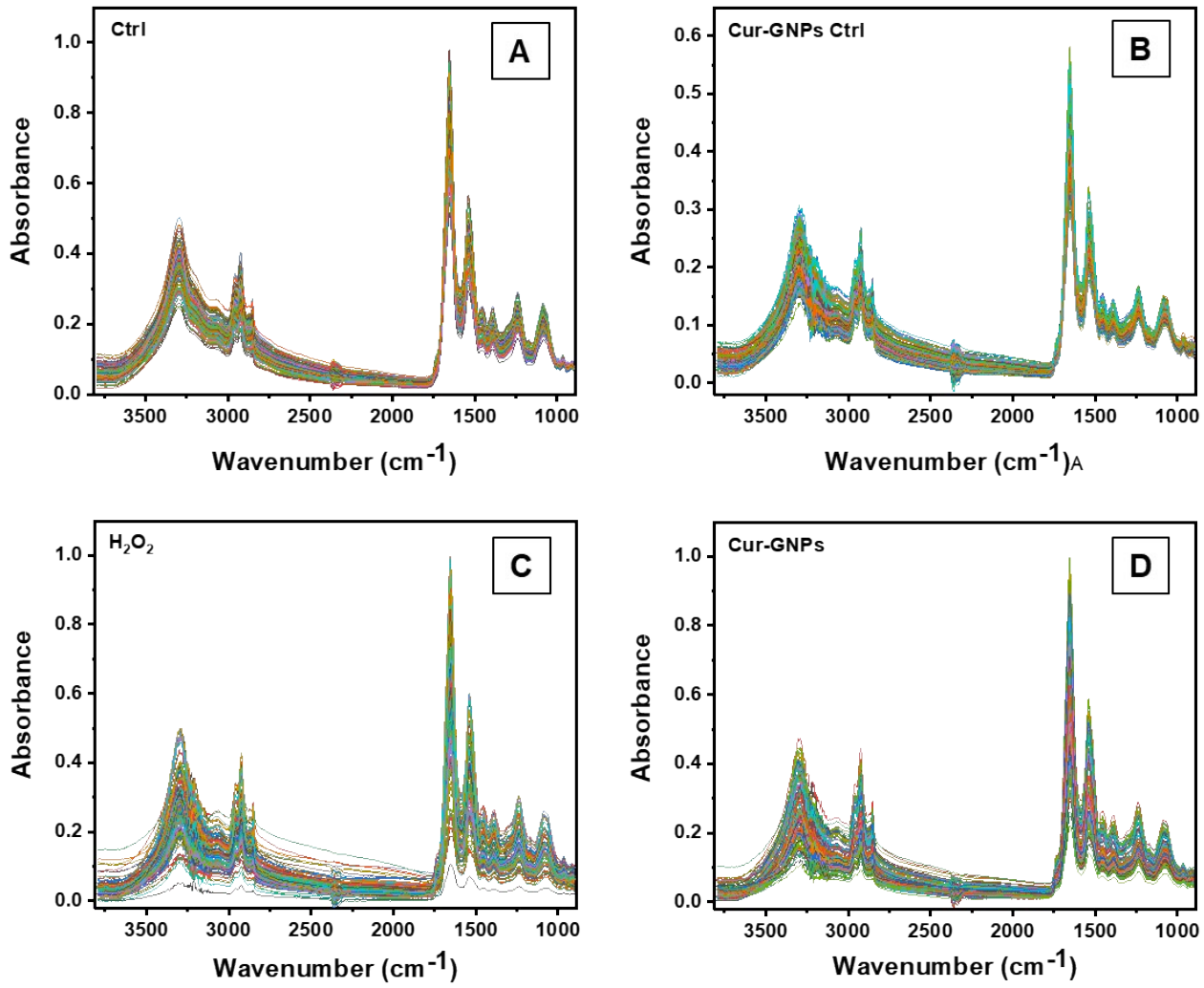

Figure S4: Raw FTIR spectra of the cells in the pre-treatment group.