

## Supplementary Information

### Supplementary Methods

#### Culture of Human Breast Cancer Cell Line (MCF-7)

The MCF-7 (Michigan Cancer Foundation-7) cells (ATCC; Manassas, USA) were cultured in Dulbecco's Modified Eagle's Medium (DMEM) supplemented with antibiotic solution (penicillin-streptomycin solution; 100 U/ml) and 10% Fetal Bovine Serum (FBS) was cultured in a CO<sub>2</sub> incubator supplying 95% humidity, 5% CO<sub>2</sub> at 37°C. Before GT-Fe<sub>2</sub>O<sub>3</sub> nanoparticle exposure, the MCF-7 cells were sub-cultured by adding inoculum from the trypsinized (0.25 %) cells of 85 % confluent culture. The cells with 95 % viability were confirmed by a trypan blue dye exclusion assay.