Magnetic, Optical Gold Nanorods for Recyclable Photothermal Ablation of Bacteria

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Figure captions

**Fig. ES1** Experiment involving bactericidal activity measurement. (a) Decreased OD$_{600}$ values were obtained when exposing *E. coli* and *E. faecalis* to different photothermal temperatures from laser irradiation with GNR-MNP. The maximum bactericidal temperature (MBT) values were obtained from liner fit curve. (b) Impact of continuous laser irradiation on elemental composition of GNR-MNP.

**Fig. ES2** Temperature history. The difference in temperature change for the laser enable photothermal method (Red) and hot-plate heat induced method (Green), compared to room temperature (Black).

**Fig. ES3** The increasing temperature effect of hot plate mediated heat bath on the viability of bacteria. The fluorescence microscopy images (imaged at 100X magnification. Scale bar = 15 µm) representing different levels of temperature exposure of bacterial strains (a) *E.coli* and (b) *E.faecalis* at 40, 50, 60, 70, 80, 90, and 100 °C in a saline solution for 15 min.

**Fig. ES4** Hot-plate temperature effect. Graphical summary of the cell lysis rate for the two bacteria at different temperatures of hot-plate induced heat.
Fig. ES1
Fig. ES3
Fig. ES4