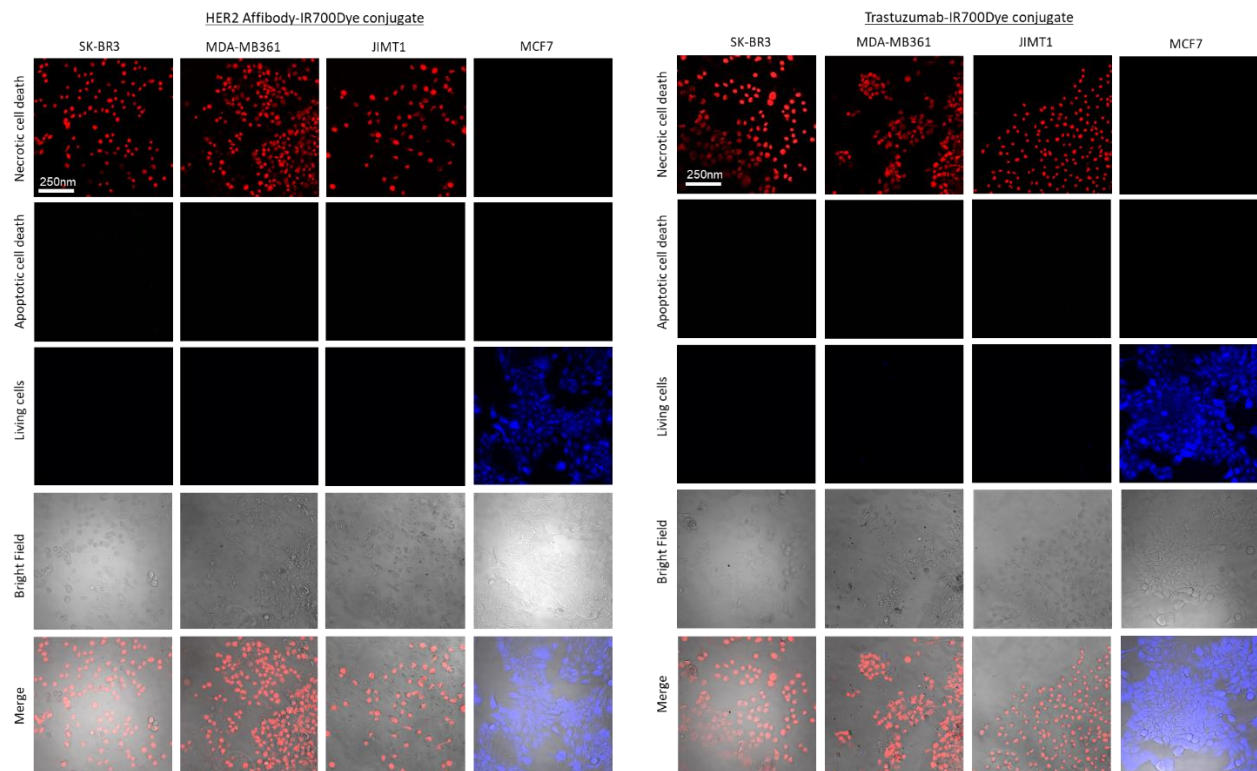


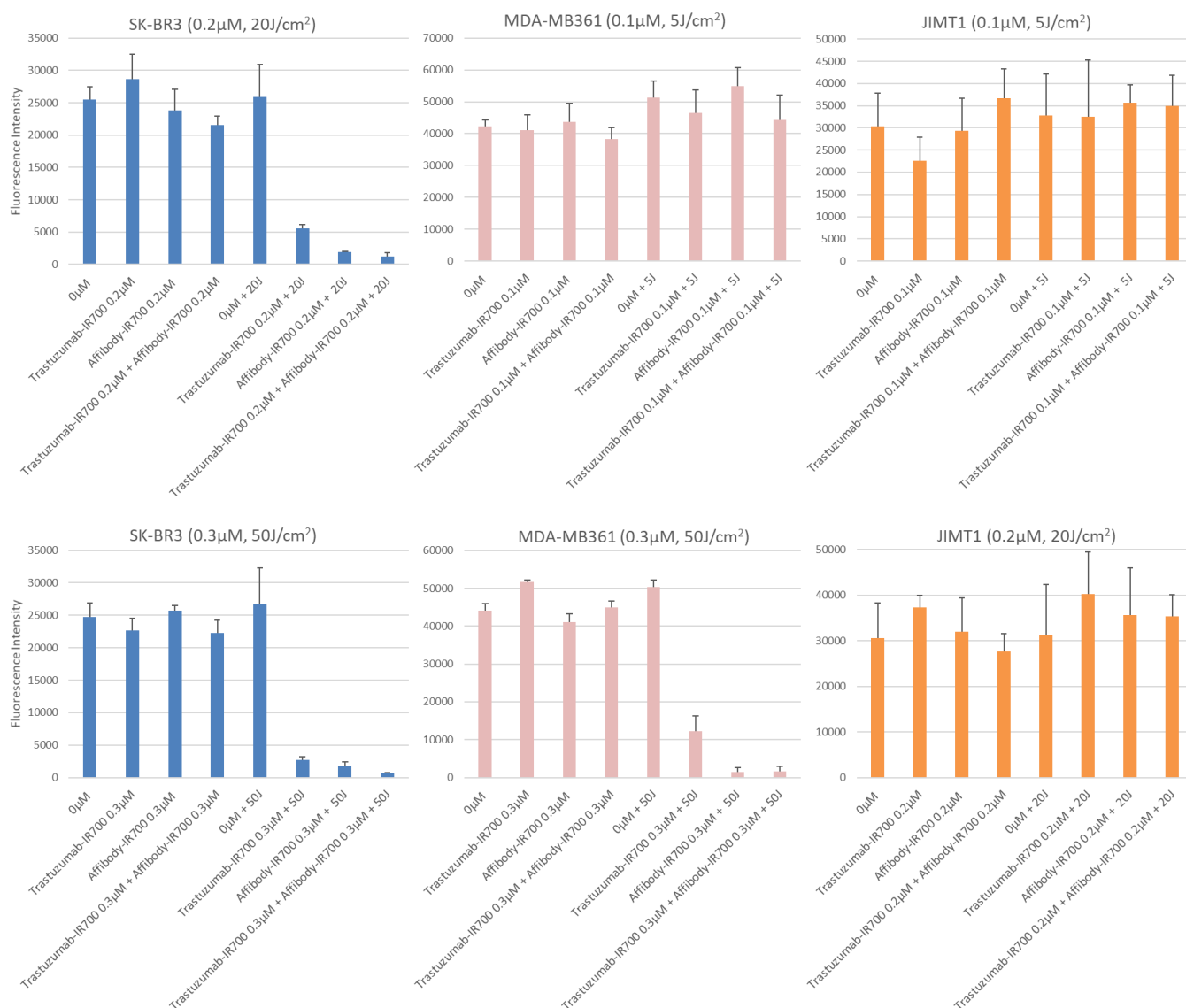
Supplementary Information Figure 1. Cell images before and after NIR-PIT.

Cell images before and after NIR-PIT using HER2 Affibody-IR700Dye conjugate or Trastuzumab-IR700Dye conjugate. Images of cancer cells showed that only HER2-positive cancer cells (SK-BR3, MDA-MB361, JIMT1) displayed morphological evidence of cellular bursting and/or bleb formation, while the morphology of HER2-negative cancer cells (MCF7) remained unchanged. Scale bar: 100 μ m.



Supplementary Information Figure 2. Apoptosis/Necrosis Assay.

Apoptosis/Necrosis Assay Kit stains living cells blue, apoptotic dead cells green, and necrotic dead cells red. HER2-positive cancer cells (SK-BR3, MDA-MB361 and JIMT1) exposed to NIR-PIT by either HER2 Affibody-IR700Dye conjugate or Trastuzumab-IR700Dye showed red signal whereas HER2-negative cancer cells (MCF7) stained blue. Scale bar: 250 μ m.



Supplementary Information Figure 3. Cell viability after NIR-PIT.

HER2-positive cancer cells (SK-BR3, MDA-MB361 and JIMT1) and HER2-negative cancer cells (MCF7) were incubated with HER2 Affibody-IR700Dye conjugate and/or Trastuzumab-IR700Dye conjugate (0, 0.1, 0.2, 0.3μM) and irradiated near infrared light (690nm) (0, 20, 50J/cm²). SK-BR3 cells were killed by NIR-PIT with more than 0.1μM conjugate and 5J/cm² irradiation, but MDA-MB361 cells need more than 0.2μM conjugate and 20J/cm² irradiation, and JIMT1 cells need more than 0.3μM conjugate and 50J/cm² irradiation to be affected. The effect of NIR-PIT depends on the level of HER2 expression, the concentration of the conjugates, and the power of irradiation. (n = 6). Data are presented as means ± SD.