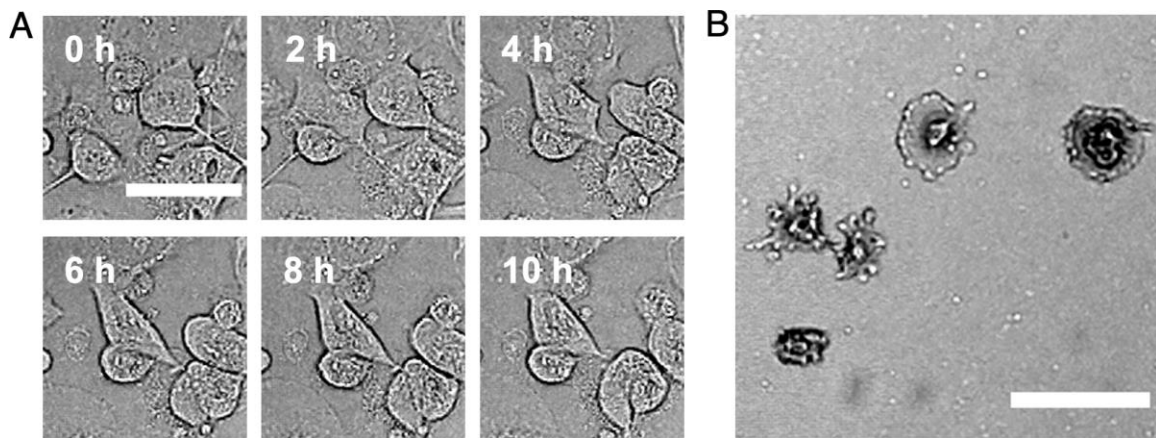


Supplemental Figure 1: Merged brightfield/beta image of a dried ^{18}F -FDG drop. Scale bar is 500 microns.



Supplemental Figure 2: Brightfield imaging of live and fixed cells. (A) Time lapse brightfield images of MDA-MB-231 cells up to 10 hours. Scale bar is 50 μm . (B) Irradiated MDA-MB-231 cells (8 Gy dose), fixed and stained with crystal violet blue. Scale bar is 100 μm .

Supplemental Video 1: Time-lapse brightfield movie of MDA-MB231 cells. Cells were imaged every 5 min for a total of 10 hours. Movie represents 462 μm by 462 μm subset of field-of-view. Scale bar is 100 μm .

Supplemental Video 2: Decay-corrected kinetic ^{18}F FDG LRM movie of MDA-MB231 cells. Cells were incubated with 5 MBq/mL ^{18}F FDG and imaged immediately. Each frame is 10 minutes of beta signal integration time. Total imaging time is 190 minutes. Movie represents 462 μm by 462 μm subset of field-of-view. Scale bar is 100 μm .