## Supplementary Data

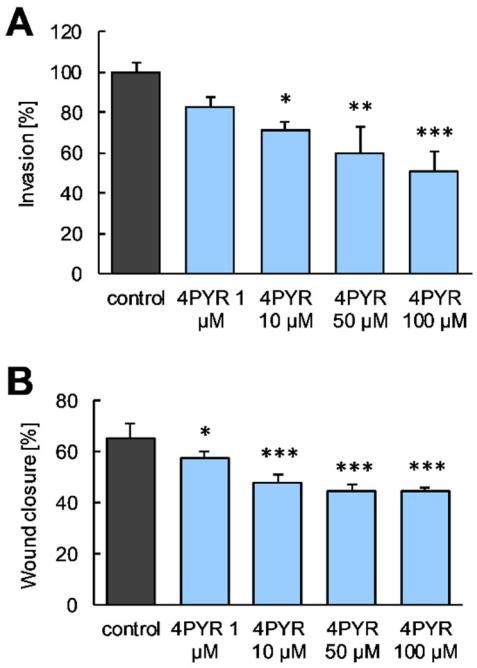


**Figure S1. 4PYR-induced the decrease in invasion and migration of 4T1 breast cancer cell line *in vitro* is dose-dependent. (A)** 4PYR inhibited Matrigel invasion of 4T1 cells at a concentration range from 10 to 100 μM, while it had no effect at 1 μM. After overnight serum starvation, cells were seeded in a transwell invasion chamber and treated with serial dilutions of 4PYR, as indicated on a graph, for 24 hours. The percentage of cells that invaded across the filter was counted by Mayer's Hematoxylin staining after fixation. The graph represents the mean ± SEM of four independent experiments. *p<0.05, **p<0.01, ***p<0.001 vs. control (non-treated cells). **(B)** 4PYR inhibits collective migration of 4T1 cells at a concentration range from 1 to 100 μM. Cells were seeded in a 96-well plate, and after overnight serum-starvation, a linear wound was applied. The percentage of wound closure was calculated by subtracting the width of the wound after 24 hours from its initial width at time 0 (demonstrated as bars on representative images). The graph represents the mean ± SEM of four independent experiments. *p<0.05, ***p<0.001 vs. control (non-treated cells).

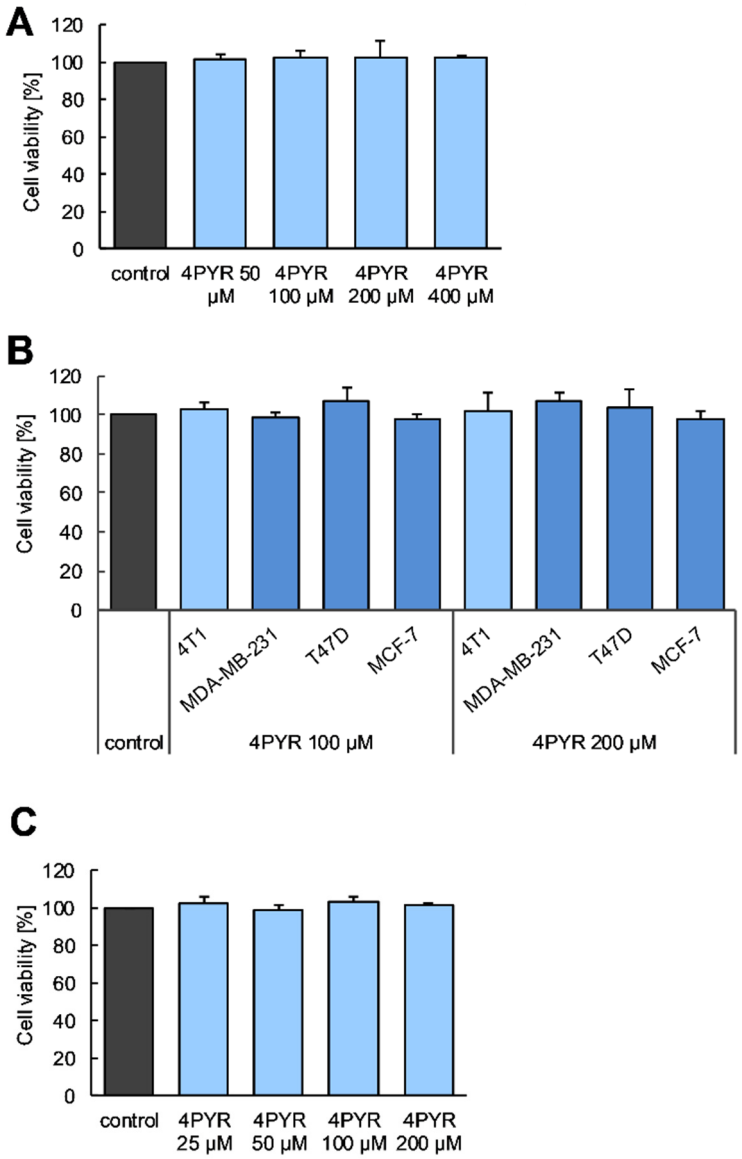


**Figure S2. 4PYR does not affect the viability of analyzed cells, both murine and human tumor cell lines, and an endothelial cell line. (A)** 4PYR did not affect the viability of 4T1 murine breast cancer cell line at the concentration range of 50-400 µM, **(B)** 4PYR did not affect the viability of human breast cancer cell lines (MDA-MB-231, T47D, and MCF-7) at a concentration of 100 and 200 µM, comparable to 4T1 cell line, **(C)** 4PYR did not affect the viability of H5V murine endothelial cell line at the concentration range of 25-200 µM. Viability was analyzed with a Neutral Red uptake assay *in vitro*. Mean ± SEM, n=3.