



Supplementary Figure S5. Characterization of the PC-3 tumor model. (A) PSMA cell surface expression. PSMA expression intensity was determined in PC-3-PIP and PC-3 cells by flow cytometry (one representative histogram out of three is shown). **(B)** Radiosensitivity of PC-3 sublines. PC-3 and PC-3-PIP cells, respectively, were irradiated with 2 Gy or 5 Gy and stained with crystal violet on day 6 after seeding (one representative out of three assays is shown). **(C)** *In vivo* tumor growth characteristics do not differ between PC-3 sublines. PC-3 and PC-3-PIP cells, respectively, were s.c. injected into NSG mice. Tumor volume was monitored by CT 1-2x/ week starting on day 19 after inoculation. Relative tumor volumes (compared to tumor volume at day

19) are shown (n=5 mice/group). Differences between groups were statistically not significant (for all, $p \geq 0.1555$). **(D-F)** PSMA expression of tumors resected was determined by IHC two days after RLT. **(D)** PSMA expression in the different experimental groups. **(E)** ^{177}Lu -PSMA tumor uptake correlates with PSMA expression ($R^2=0.9805$, polynomial regression; right graph). **(F)** Representative IHC images. Brown staining indicates PSMA positivity. Data are represented as mean \pm SD (C-E). Asterisks indicate statistical significance. The numbers 0, 33, 66, 100%, respectively, indicate the percentage of PSMA-positive cells injected (vs. PSMA-negative cells).