

Supplemental Figure Legends:

Supplemental Figure 1A: PSA waterfall plots by dose received

Each individual subject's best PSA response on study. The top figure depicts those subjects who received 65 mCi/m² and the bottom figure depicts those who received 70 mCi/m² (the phase I maximum tolerated dose).

Supplemental Figure 1B: Circulating Tumor Cell Count waterfall plot

Each individual subject's % change in CTC count from baseline to 4-6 weeks following therapy with 70 mCi/m² of ¹⁷⁷Lu-J591. Using the 5 CTC/7.5 mL cutoff, 6 began and remained favorable, 3 converted from unfavorable to favorable (7→3, 18→0, 34→0), and 3 had decline in counts, but remained unfavorable (161→118, 228→110, 60→16). Three subjects had 0 CTC's per 7.5 mL blood at baseline and remained with 0 at follow up.

Supplemental Figure 1C: Change in measurable disease

Each individual subject with measurable disease is depicted with % change in sum of unidimensional measurements (RECIST). Dose of ¹⁷⁷Lu-J591 received is indicated by color.