MATERIALS AND METHODS

Imaging and Dosimetry

After segmentation, the SPECT activity of source regions was used to scale the time-activity curves obtained from planar imaging. In the next step, these time-activity curves were fitted to mono- or bi-exponential functions to calculate effective half-lives and the time-integrated activity coefficient. Mean absorbed organ and tumour doses were estimated using OLINDA 2.0. For normal organs, the IRCP 89 adult male model included in OLINDA 2.0 was used. Volumes of normal organs and metastases were obtained by the CT of the patient from SPECT/CT scans by using a Siemens Symbia T camera system (Siemens Healthcare GmbH, Erlangen, Germany) with the following settings: MELP collimator, peak at 113 keV and 208 keV (15 % energy windows and 20 % upper and lower scatter window), 128x128 matrix, 32 projections with 30 s per step, body contour; CT: 130 kV, 5mm slices, CAREDOSE.

Supplemental Table 1 Maximum amount of activity and number of possible therapy cycles to reach dose limits for both PSMA ligands according to the current organ radiation-absorbed dose constraints

	Whole Body	Kidneys	Parotid glands
Organ radiation-absorbed dose constraints (Gy)	2	23	52
Maximum amount of activity to reach dose limit for ^{177}Lu-PSMA I&T (GBq)	73	25	96
Number of possible cycles to reach dose constraints, activity per cycle = 6 GBq ^{177}Lu-PSMA I&T	12	4	16
Maximum amount of activity to reach dose limit for ^{177}Lu-PSMA-617 (GBq)	52	30	109
Number of cycles of possible cycles to reach dose constraints, activity per cycle = 6 GBq ^{177}Lu-PSMA-617	9	5	18