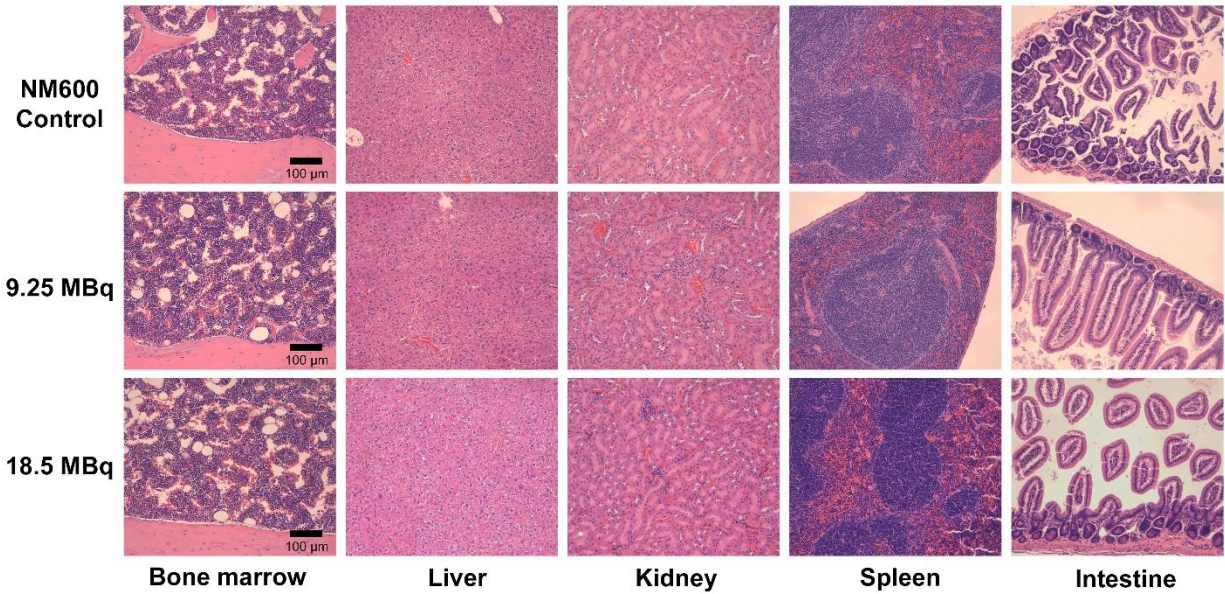


Supplemental figure 1 Blood time-activity curves of ^{86}Y -NM600 in Balb/C mice bearing syngeneic s.c. 4T07 or 4T1 breast tumors. Blood circulation half-life ($T_{1/2}$) was calculated by fitting the quantitative PET data to a monoexponential decay. Similar circulation $T_{1/2}$ were observed (20.4 ± 4.3 h vs. 19.7 ± 10.5 h) between the two groups.



Supplemental figure 2. Histopathology examination of H&E tissue sections corresponding to the bone marrow, liver, kidney, spleen, and small intestine, six weeks after injection of NM600, or ¹⁷⁷Lu-NM600 9.25 MBq or 18.5 MBq. Similar tissue morphology was noted in all analyzed sections, indicating the absence of tissue degeneration. Scale bars represent 100 µm

Supplemental table 1 Results of the region-of-interest analysis of the longitudinal PET/CT data in mice bearing 4T1 or 4T07 subcutaneous grafts and administered ⁸⁶Y-NM600 (9.25 MBq). Data are presented as %IA/g (mean ± SD).

Time (h p.i.)	Tumor (%IA/g)		Heart/blood (%IA/g)		Liver (%IA/g)		Spleen (%IA/g)		Kidneys (%IA/g)		Muscle (%IA/g)		Bone/Marrow (%IA/g)		Whole Body (%IA/g)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
86Y-NM600 in 4T1 bearing mice																
4	5.4	0.1	10.5	1.1	10.2	1.0	4.5	0.4	5.7	0.4	2.0	0.3	2.2	0.3	3.8	0.5
24	11.0	1.3	6.1	0.8	11.3	1.9	4.8	0.2	5.1	0.7	1.5	0.2	1.7	0.3	3.6	0.4
48	9.9	0.6	3.3	0.2	8.9	0.5	3.8	0.4	3.5	0.4	1.2	0.1	1.3	0.1	2.6	0.2
72	10.1	0.5	2.4	0.4	6.5	0.5	2.7	0.3	2.7	0.5	0.8	0.2	1.0	0.1	1.9	0.3
86Y-NM600 in 4T07 bearing mice																
4	5.4	0.6	10.1	0.4	8.2	0.3	3.9	0.9	5.3	0.4	1.9	0.1	2.2	0.1	3.4	0.1
24	11.8	1.3	6.0	0.3	9.3	1.1	3.4	0.2	4.5	0.3	1.5	0.2	1.8	0.3	3.0	0.2
48	12.9	1.3	3.3	0.3	7.5	0.5	3.1	0.4	3.6	0.1	1.2	0.1	1.4	0.3	2.5	0.2
72	12.3	2.2	2.4	0.1	5.8	0.6	1.8	0.8	3.0	0.2	1.6	1.0	1.1	0.2	2.1	0.2

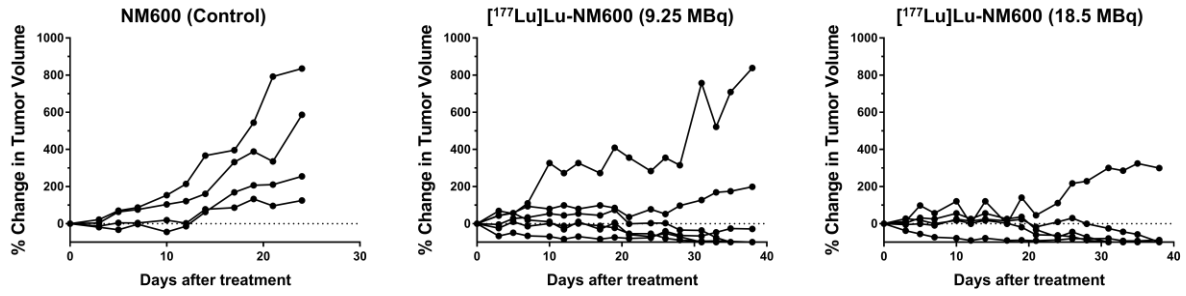
Supplemental table 2 Results of *ex vivo* biodistribution in mice bearing 4T07 or 4T1 tumors grafts, and administered either ⁸⁶Y-NM600 (9.25 MBq) or ¹⁷⁷Lu-NM600 (9.25 MBq), 72 h post-injection. Data is presented as %IA/g (mean ± SD).

Agent	4T07 bearing mice				4T1 bearing mice			
	⁸⁶ Y-NM600		¹⁷⁷ Lu-NM600		⁸⁶ Y-NM600		¹⁷⁷ Lu-NM600	
Tissue	Mean*	SD	Mean*	SD	Mean*	SD	Mean*	SD
Tumor	17.31	0.80	17.67	7.48	9.47	2.40	10.67	0.08
Blood	2.89	0.27	3.19	0.51	2.01	0.49	2.45	0.25
Skin	2.56	0.51	1.94	0.48	1.47	0.28	2.32	0.44
Muscle	0.78	0.17	0.52	0.02	0.62	0.35	0.46	0.05
Bone/Marrow	1.02	0.27	0.94	0.34	0.51	0.16	0.98	0.05
Heart	2.09	0.23	2.12	0.18	1.55	0.29	1.94	0.41
Lung	3.91	0.16	3.50	0.61	1.95	0.61	2.36	0.27
Liver	8.31	2.56	8.21	0.47	8.98	1.08	7.45	0.27
Kidney	5.45	0.79	5.10	0.19	3.77	0.91	4.44	0.21
Spleen	3.44	0.50	2.70	0.11	3.48	0.68	2.64	0.43
Pancreas	1.19	0.14	1.37	0.06	1.12	0.28	1.15	0.15
Stomach	1.07	0.12	0.8	0.17	0.58	0.38	0.97	0.12
Intestine	1.96	0.17	1.41	0.15	0.99	0.33	1.15	0.39
Brain	0.17	0.02	0.13	0.04	0.08	0.03	0.16	0.03

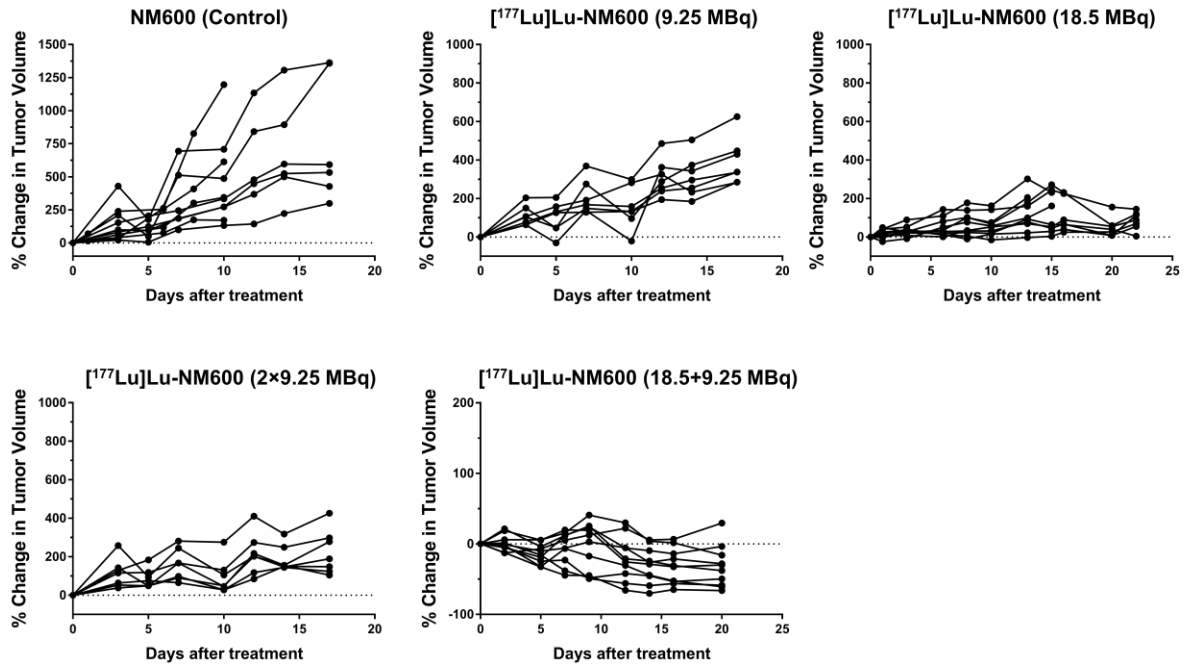
*data is presented as percent injected activity per gram of tissue (%IA/g)

Supplemental table 3 Summary of results from the dosimetry estimation for ⁹⁰Y-NM600 using longitudinal ⁸⁶Y-NM600 PET/CT data and The Standard Mouse Model.

Target Organ	Cumulative Activity [(MBq-sec)/MBq]	$\sum_s \phi_B(r_t \leftarrow r_s)(\tilde{A}_s)$	Absorbed Dose (Gy/MBq)	Dose (9.25 MBq)
Liver	28644.57	21282.91	3.04	28.1
Spleen	1332.53	1044.35	1.74	16.1
Kidney	3980.59	3058.51	1.73	16.0
Lungs	1361.76	3344.07	3.34	30.9
Heart	1943.09	1451.62	1.89	17.5
Stomach	1588.72	2322.27	1.99	18.4
S bowel	7970.82	10947.58	1.87	17.3
L bowel	3014.02	2799.23	1.26	11.7
Thyroid	953.23	963.16	1.37	12.7
Tumor	26004.45	17978.74	2.69	24.9
Pancreas	953.23	662.53	0.95	8.7
Bone	998.62	1041.73	1.42	13.1
Marrow	30.80	47.16	0.79	7.3
Carcass	191699.11	194828.76	1.38	12.8



Supplemental figure 3 Individual weight of mice bearing s.c. 4T07 tumors injected with unlabeled NM600, or 9.25 or 18.5 MBq of ⁹⁰Y-NM600. Data are presents as percent of the initial weight.



Supplemental figure 4 Individual tumor growth curves of mice bearing s.c. 4T1 tumors injected with unlabeled NM600, 9.25, 18.5, 2x9.25, or 18.5 + 9.25 MBq of ^{177}Lu -NM600. Data are presented as a fraction of the initial tumor volume.