

Supplementary

Figure S1

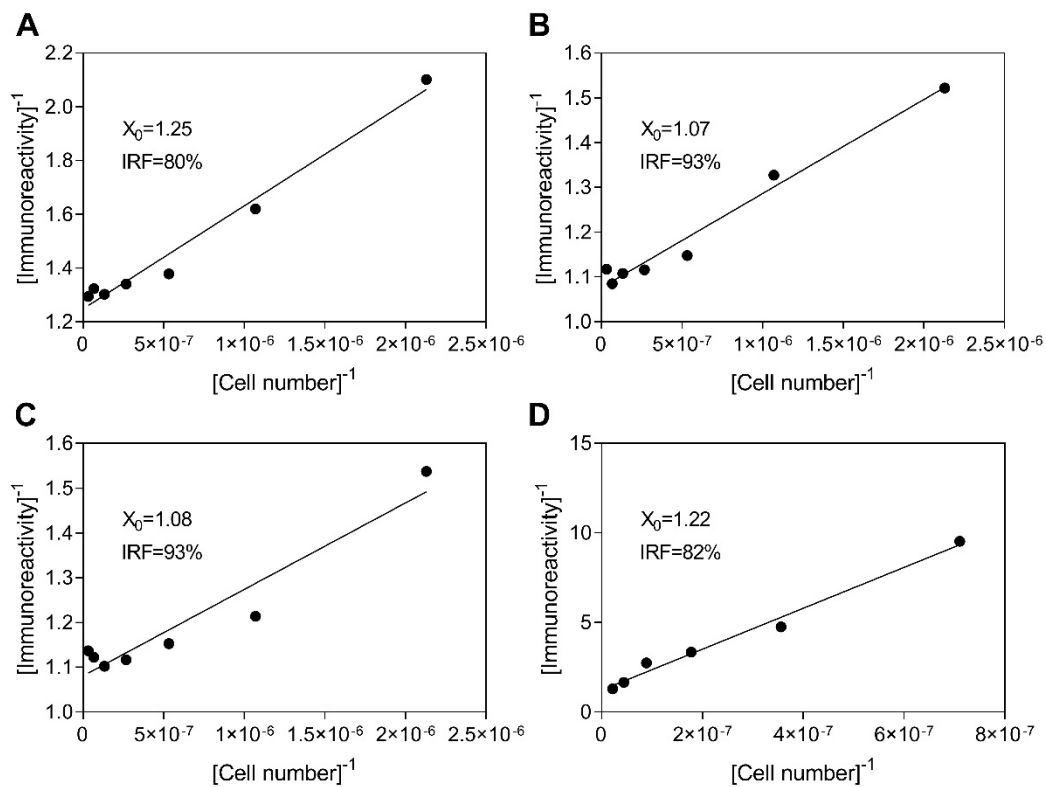


Figure S1: Immuno-reactive fraction assay of ⁸⁹Zr-DFO-trastuzumab. Immuno-reactive fraction of random (A), β -Gal (B), endoS2 (C) and endoS2-R (D) labeled ⁸⁹Zr-DFO-trastuzumab incubated with SK-OV-3 cells.

Figure S2

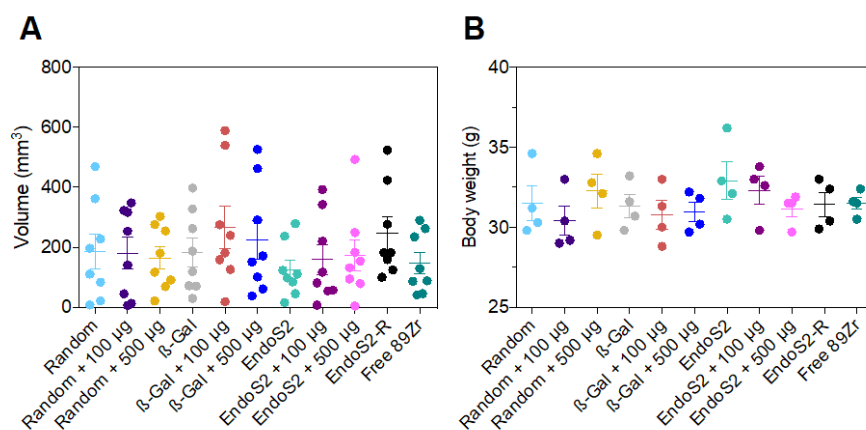


Figure S2: Randomization of animals for the ⁸⁹Zr-DFO-trastuzumab imaging and biodistribution study. Tumor volumes (A) and body weight (B) of mice at the day of randomization. No differences in tumor volume ($p=0.7331$) and body weight ($p=0.6793$) were found between groups.

Figure S3

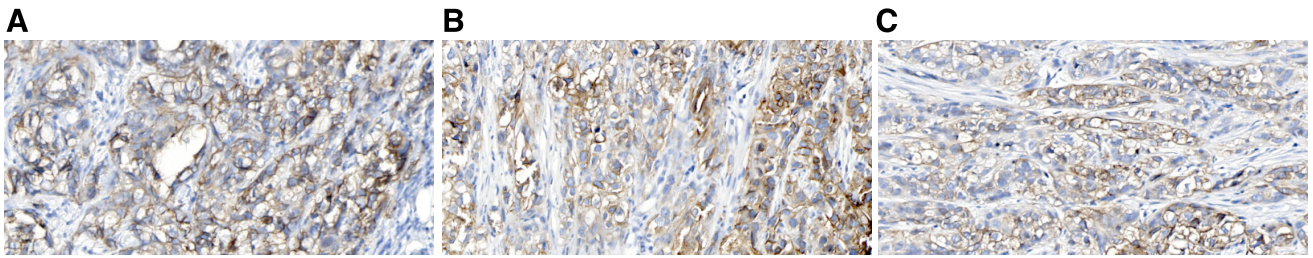


Figure S3: Immunohistochemical (IHC) analysis of HER2 expression. *Ex vivo* IHC analysis of HER2 expression in SK-OV-3 tumor-bearing mice receiving random (A), β -Gal (B) or endoS2 (C) modified ^{89}Zr -DFO-trastuzumab.

Figure S4

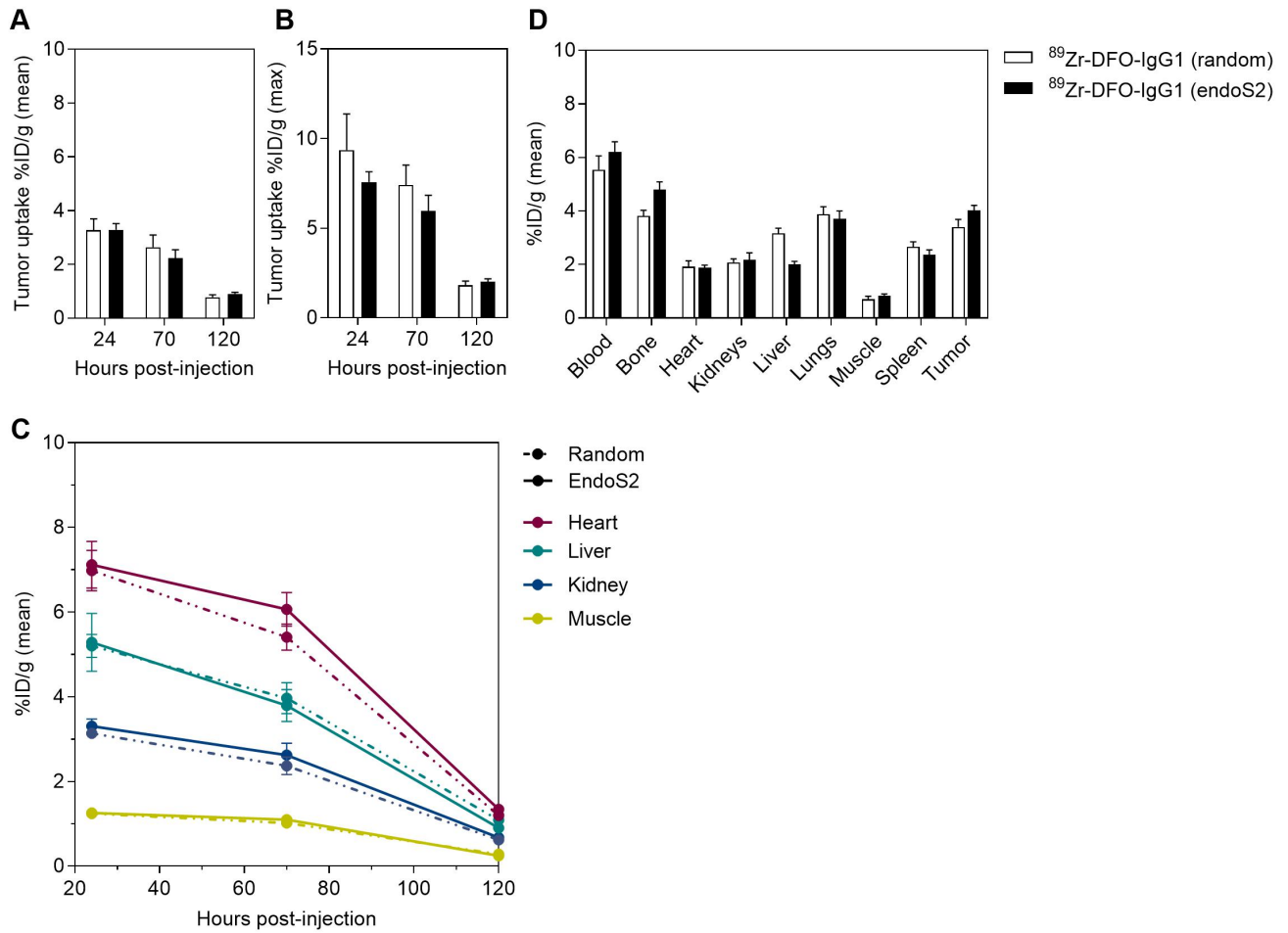


Figure S4: Isotype control PET/CT imaging and biodistribution in SK-OV-3 tumor-bearing mice. Mean (A) and maximum (B) tumor uptake 24, 70 and 120 hours post-injection of random and endoS2 modified ^{89}Zr -DFO-IgG1. (C) Image-derived biodistribution of ^{89}Zr -DFO-IgG1 in major organs over the imaging time-course. (D) *Ex vivo* biodistribution 120 hours after injection of ^{89}Zr -DFO-IgG1. N=4/tracer for all experiments.

Table S1: Ex vivo biodistribution tumor-to-background ratios

	Co-injection	⁸⁹ Zr-DFO-trastuzumab		
		Random	β-Gal	EndoS2
Tumor-to-blood	0	5.1 ± 0.4	9.8 ± 1.1	8.1 ± 1.0
	100 µg	6.5 ± 0.5	8.3 ± 1.3	5.7 ± 0.7
	500 µg	3.3 ± 0.2	3.9 ± 0.3	4.0 ± 0.2
Tumor-to-muscle	0	23.3 ± 2.7	31.5 ± 4.8	49.9 ± 6.3
	100 µg	21.4 ± 2.2	34.5 ± 3.6	32.2 ± 4.2
	500 µg	23.2 ± 1.4	31.0 ± 4.0	27.7 ± 4.1

Values are mean ± SEM