

**Supporting Table 1.** Mean ( $\pm$  SD) AUC<sub>0-7</sub> values in blood, tumor, and various tissues for <sup>125</sup>I- (top) and <sup>111</sup>In (bottom) labeled antibodies.

Molecule(s)	dose (mg/kg)	AUC <sub>0-7</sub> (%ID/g×day)								
		blood	tumor	liver	spleen	kidney	lung	heart	muscle	fat
<sup>125</sup> I-Tmab	0.1	123 $\pm$ 4.70	68.9 $\pm$ 11.6	24.5 $\pm$ 0.876	86.2 $\pm$ 4.38	25.2 $\pm$ 0.810	36.3 $\pm$ 1.67	20.2 $\pm$ 0.609	6.74 $\pm$ 0.437	14.2 $\pm$ 0.759
	1.4	120 $\pm$ 2.76	51.3 $\pm$ 3.47	24.0 $\pm$ 0.972	80.6 $\pm$ 5.46	25.8 $\pm$ 0.636	36.7 $\pm$ 1.09	20.2 $\pm$ 0.516	7.03 $\pm$ 0.146	14.7 $\pm$ 0.609
	17	124 $\pm$ 3.53	48.5 $\pm$ 3.45	18.5 $\pm$ 0.752	38.9 $\pm$ 3.82	26.6 $\pm$ 0.657	36.8 $\pm$ 0.869	21.6 $\pm$ 0.801	6.80 $\pm$ 0.171	14.2 $\pm$ 0.747
B20-4.1, <sup>125</sup> I-Tmab	0.1	131 $\pm$ 4.66	33.5 $\pm$ 6.42	16.7 $\pm$ 0.880	30.6 $\pm$ 2.08	26.4 $\pm$ 0.722	38.5 $\pm$ 1.01	20.9 $\pm$ 0.651	6.63 $\pm$ 0.289	14.0 $\pm$ 0.761
	1.4	136 $\pm$ 3.89	29.1 $\pm$ 2.44	18.6 $\pm$ 0.796	33.7 $\pm$ 2.03	27.9 $\pm$ 1.23	41.8 $\pm$ 1.45	23.2 $\pm$ 0.866	6.90 $\pm$ 0.225	12.8 $\pm$ 1.93
	17	136 $\pm$ 2.87	30.7 $\pm$ 2.42	17.7 $\pm$ 0.722	30.3 $\pm$ 1.86	29.7 $\pm$ 0.806	44.0 $\pm$ 1.39	23.6 $\pm$ 0.503	7.38 $\pm$ 0.431	13.7 $\pm$ 0.986
<sup>125</sup> I-IgG	18	107 $\pm$ 2.43	31.3 $\pm$ 0.947	17.5 $\pm$ 1.65	38.6 $\pm$ 2.40	23.6 $\pm$ 2.09	31.5 $\pm$ 2.62	18.2 $\pm$ 1.85	6.33 $\pm$ 1.06	11.4 $\pm$ 1.63
B20-4.1, <sup>125</sup> I-IgG	18	112 $\pm$ 2.61	24.1 $\pm$ 1.09	14.4 $\pm$ 1.68	23.8 $\pm$ 3.11	23.4 $\pm$ 2.11	35.0 $\pm$ 2.16	19.3 $\pm$ 1.68	6.75 $\pm$ 0.779	12.0 $\pm$ 1.38
<sup>111</sup> In-Tmab	0.1	110 $\pm$ 4.19	204 $\pm$ 18.6	24.7 $\pm$ 2.27	85.5 $\pm$ 6.92	31.0 $\pm$ 2.24	31.4 $\pm$ 2.70	17.4 $\pm$ 1.77	5.47 $\pm$ 1.04	10.0 $\pm$ 1.57
	1.4	119 $\pm$ 2.55	222 $\pm$ 12.5	24.7 $\pm$ 1.78	77.7 $\pm$ 4.61	33.0 $\pm$ 2.25	35.1 $\pm$ 2.14	19.0 $\pm$ 1.91	5.60 $\pm$ 0.885	10.5 $\pm$ 1.24
	17	121 $\pm$ 3.47	153 $\pm$ 15.9	17.4 $\pm$ 1.66	41.9 $\pm$ 4.67	32.8 $\pm$ 2.34	33.2 $\pm$ 2.44	20.0 $\pm$ 1.87	5.26 $\pm$ 0.839	10.8 $\pm$ 1.62
B20-4.1, <sup>111</sup> In-Tmab	0.1	116 $\pm$ 4.02	95.5 $\pm$ 14.9	16.7 $\pm$ 1.99	30.5 $\pm$ 3.31	33.4 $\pm$ 2.46	33.3 $\pm$ 2.73	18.2 $\pm$ 1.99	5.01 $\pm$ 0.947	9.77 $\pm$ 1.31
	1.4	134 $\pm$ 3.92	116.5 $\pm$ 10.4	19.2 $\pm$ 2.40	33.9 $\pm$ 2.89	37.0 $\pm$ 2.54	38.2 $\pm$ 2.76	21.7 $\pm$ 1.99	5.37 $\pm$ 0.785	9.77 $\pm$ 1.24
	17	132 $\pm$ 2.64	84.1 $\pm$ 7.72	21.2 $\pm$ 1.93	34.3 $\pm$ 2.94	39.2 $\pm$ 2.74	42.0 $\pm$ 2.82	22.0 $\pm$ 1.89	6.07 $\pm$ 1.09	9.81 $\pm$ 1.26
<sup>111</sup> In-IgG	18	123 $\pm$ 2.24	52.9 $\pm$ 2.00	23.0 $\pm$ 1.84	51.7 $\pm$ 3.20	36.6 $\pm$ 2.74	37.1 $\pm$ 2.73	20.4 $\pm$ 1.89	6.28 $\pm$ 0.954	10.5 $\pm$ 1.51
B20-4.1, <sup>111</sup> In-IgG	18	129 $\pm$ 2.39	36.2 $\pm$ 1.41	19.3 $\pm$ 0.374	33.6 $\pm$ 1.79	40.9 $\pm$ 0.812	41.7 $\pm$ 0.378	21.8 $\pm$ 0.457	6.94 $\pm$ 0.266	10.8 $\pm$ 0.488

**Supporting Table 2.** Mean physiological values with standard deviations in tumor and various tissues. Vascular volumes ( $V_v$ ) and interstitial volumes ( $V_i$ ) are in  $\mu\text{L/g}$ , and blood flow rates ( $Q$ ) are in  $\mu\text{L/g/min}$ .

	$V_v$ (n=5)		$V_i$ (n=5)		$Q$ (n=4)	
	-----	<b>B20-4.1 10 mg/kg</b>	-----	<b>B20-4.1 10 mg/kg</b>	-----	<b>B20-4.1 10 mg/kg</b>
tumor	$8.2 \pm 1.3$	$7.2 \pm 1.4$	$170 \pm 25$	$140 \pm 54$	$99 \pm 28$	$49 \pm 12^*$
liver	$55 \pm 11$	$51 \pm 5$	$72 \pm 8.5$	$66 \pm 27$	$150 \pm 22$	$170 \pm 70$
spleen	$117 \pm 36$	$95 \pm 23$	n.r. <sup>a</sup>	n.r. <sup>a</sup>	$89 \pm 18$	$110 \pm 13$
kidney	$108 \pm 28$	$99 \pm 23$	$1200 \pm 300$ <sup>b</sup>	$1400 \pm 640$ <sup>b</sup>	$1100 \pm 140$	$1500 \pm 1000$
lung	$214 \pm 78$	$173 \pm 21$	$270 \pm 120$	$230 \pm 30$	$470 \pm 86$	$520 \pm 150$
heart	$49 \pm 9$	$47 \pm 13$	$190 \pm 92$	$120 \pm 34$	$820 \pm 160$	$910 \pm 290$
muscle	$5.4 \pm 2.0$	$5.7 \pm 1.5$	$48 \pm 8.0$	$52 \pm 7.8$	$170 \pm 79$	$200 \pm 51$
fat	$9.3 \pm 4.0$	$6.0 \pm 1.7$	$49 \pm 12$	$51 \pm 12$	$68 \pm 30$	$72 \pm 17$

\* Denotes statistical significance by unpaired  $t$ -test ( $p < 0.05$ )

<sup>a</sup>  $V_i$  values are not reported (n.r.) for spleen due to dependence of  $V_i$  on  $V_v$  and the spleen's role in red blood cell sequestration, which results in calculation of negative values

<sup>b</sup> Renal  $V_i$  values are not physiologically accurate due to the kidney's role in radioprobe clearance