

Supplemental Table 1. *Ex vivo* biodistribution (24 h p.i.) of male nude mice bearing 22Rv1 (low PSCA) and 22Rv1-PSCA (high PSCA) xenografts. Values are depicted as Mean \pm SD, n=3.

	¹²⁴ I-A2cDb		¹²⁴ I-A2cDb-800	
	%ID/g	SD	%ID/g	SD
Blood	0.12	0.01	0.12	0.04
22Rv1-PSCA	1.12	0.24	1.02	0.47
22Rv1	0.36	0.13	0.28	0.05
Heart	0.05	0.004	0.06	0.01
Lung	0.10	0.01	0.09	0.03
Liver	0.04	0.01	0.07	0.02
Kidney	0.16	0.02	0.17	0.05
Spleen	0.06	0.001	0.08	0.03
Stomach	0.13	0.03	0.11	0.03
Intestine	0.02	0.003	0.03	0.01
Muscle	0.01	0.001	0.01	0.01
Carcass	0.03	0.002	0.04	0.01

Supplemental Table 2. *Ex vivo* biodistribution (24 h p.i.) of male NSG mice bearing patient derived xenografts (PDAC-PDX XRW6). Values are depicted as Mean \pm SD, n=7.

	¹²⁴ I-A2cDb	
	%ID/g	SD
Blood	0.10	0.01
PDX XRW6	0.85	0.17
Heart	0.04	0.01
Lung	0.09	0.02
Liver	0.04	0.01
Kidney	0.08	0.04
Spleen	0.09	0.03
Stomach	0.24	0.11

	¹²⁴ I-A2cDb	
Intestine	0.03	0.01
Muscle	0.01	0.003
Carcass	0.03	0.01

Supplemental Table 3. *Ex vivo* biodistribution (24 h p.i.) of male NSG mice bearing patient derived xenografts (PDAC-PDX XRW6 p+3). Values are depicted as Mean ± SD, n=3.

	¹²⁴ I-A2cDb		¹²⁴ I-A2cDb-800	
	%ID/g	SD	%ID/g	SD
Blood	0.06	0.01	0.13	0.01
PDX XRW6	0.15	0.004	0.16	0.02
Heart	0.02	0.004	0.03	0.01
Lung	0.05	0.01	0.08	0.01
Liver	0.03	0.001	0.20	0.01
Kidney	0.05	0.01	0.17	0.01
Spleen	0.07	0.01	0.25	0.08
Stomach	0.05	0.01	0.09	0.01
Intestine	0.01	0.001	0.04	0.01
Muscle	0.003	0.001	0.005	0.002
Carcass	0.01	0.001	0.02	0.01

Supplemental Figure 1. *Ex vivo* near-infrared fluorescence imaging 24 h p.i. of ^{124}I -A2cDb or ^{124}I -A2cDb-800. Organs of mice injected with ^{124}I -A2cDb show the expected autofluorescence in stomach, liver, intestines and spleen. In mice injected with the dual-modality probe ^{124}I -A2cDb-800, fluorescence signal is seen in the xenograft. Clearance of the tracer results in increased fluorescence signal in kidneys and slightly elevated signal in the liver.

