Table S1: Organs and tissues for biodistribution

Heart (with removal of intra-cardiac clot)	Adrenal glands
Lung	Kidney
Liver	Small intestine (ileum, with removal of intra-intestinal contents)
Spleen	Large intestine (colon distal to cecum, with removal of intra-intestinal contents)
Gallbladder (with removal of bile contents)	Ovaries
Ovary	Uterus (uninvolved with tumour)
Skin (ventral abdominal)	Muscle (left psoas)

Table S2: Number of specimens in each group for fluorescence signal-to-background ratio analysis

Group	Specimen Type	VX2 positive	VX2 negative
All Rabbits	Tumour	17	0
	Lymph Node	60	15
	Abdominal Metastases	42	5
	All specimens	119	20
1mg/kg	Tumour	7	0
	Lymph Node	29	9
	Abdominal Metastases	10	1
	All specimens	46	10
4mg/kg	Tumour	10	0
	Lymph Node	31	6
	Abdominal Metastases	32	4
	All specimens	73	10
In vivo	Tumour	12	0
	Lymph Node	41	10
	Abdominal Metastases	37	3
	All specimens	90	13
Cultured	Tumour	5	0
	Lymph Node	19	5
	Abdominal Metastases	4	2
	All specimens	28	7

Table S3: Number of specimens in each group for biodistribution analysis

Group	Specimen Type	Fluorescent VX2 positive	Fluorescent VX2 negative	Non-fluorescent VX2 negative
All Rabbits	All specimens	46	21	38
	Uterus / Tumour	13	13	0
	Lymph Nodes	24	8	15
	Omental metastases	4	0	7
	Abdominal metastases	5	0	16
1mg/kg	All specimens	17	10	15
	Uterus / Tumour	5	5	0
	Lymph Nodes	11	5	7
	Omental metastases	0	0	0
	Abdominal metastases	1	0	8
4mg/kg	All specimens	29	11	19
	Uterus / Tumour	8	8	0
	Lymph Nodes	13	3	8
	Omental metastases	4	0	3
	Abdominal metastases	4	0	8
In vivo	All specimens	34	16	15
	Uterus / Tumour	10	10	0
	Lymph Nodes	17	6	9
	Omental metastases	4	0	2
	Abdominal metastases	3	0	4
Cultured	All specimens	12	5	18
	Uterus / Tumour	3	3	0
	Lymph Nodes	7	2	6
	Omental metastases	0	0	0
	Abdominal metastases	2	0	12

Figure S1. Sensitivity and specificity formulas

Sensitivity: *true positives / (true positives + false negatives)*
Specificity: *true negatives / (true negatives + false positives)*

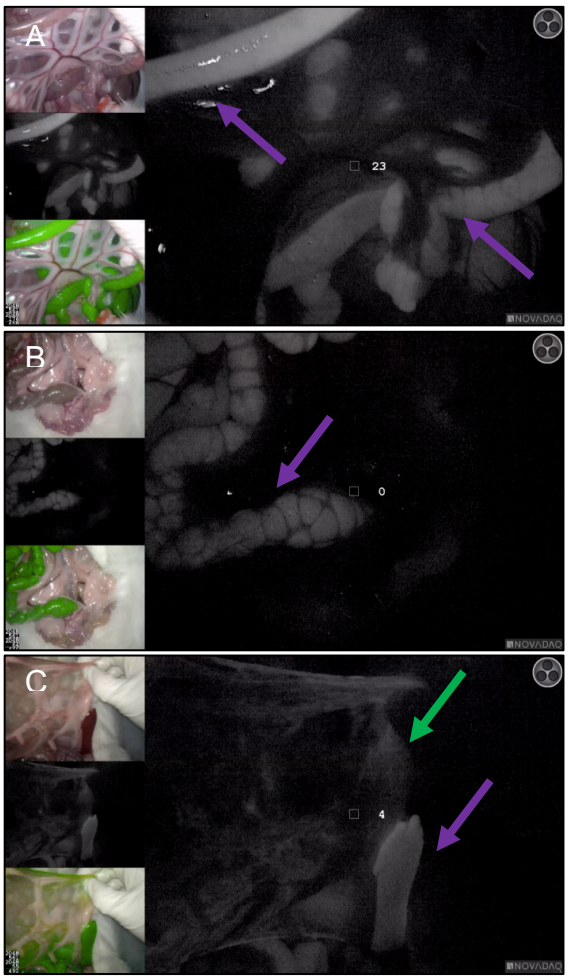

Figure S2. Background organ fluorescence, *in vivo* porphyrin fluorescence-guided resection (PYRO-FGR), PINPOINT imaging system, 675nm, greyscale filter. (A) Rabbit 28: 1 mg/kg, Ileum (loops, purple arrow). (B) Rabbit 30: 1 mg/kg, Sigmoid colon (purple arrow). (C) Rabbit 33: 4 mg/kg, Spleen (purple arrow), Omentum (green arrow).

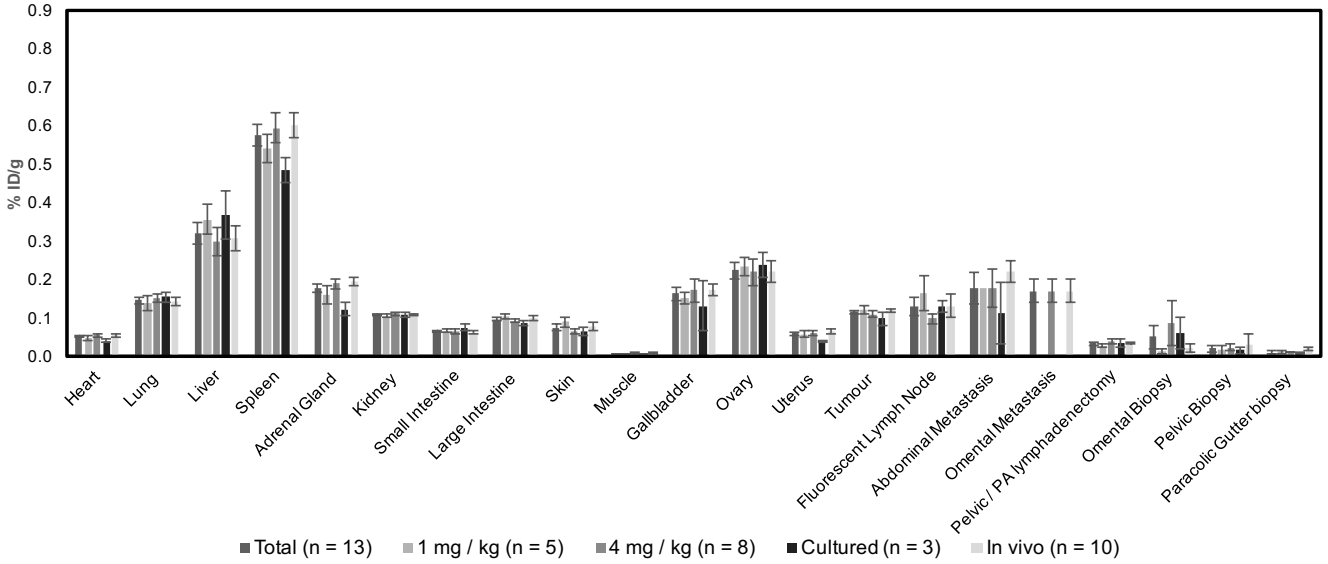

Figure S3: Porphysome biodistribution at 24 h post injection by rabbit group. %ID/g = percent injected dose per gram

Video S1: Uterine Tumour PYRO-FGR, Rabbit 11 (4 mg/kg).
Video S2: Metastatic Left Pelvic Lymph Nodes PYRO-FGR, Rabbit 9 (4 mg/kg).
Video S3: Omental Metastases PYRO-FGR, Rabbit 11 (4mg/kg), Rabbit 12 (4 mg/kg).