

Supplementary Materials for the Manuscript Entitled

“Improving Tumor Uptake and Excretion Kinetics of ^{99m}Tc-Labeled Cyclic Arginine-Glycine-Aspartic (RGD) Dimers with Triglycine Linkers”

by

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Running Title: ^{99m}Tc-labeled cyclic RGD peptide dimers for tumor imaging

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Figure SII. Radio-HPLC chromatograms of **8** in saline before injection, in urine at 30 min and 120 min p.i., and in feces at 120 min p.i. Each mouse was administered with ~ 100 μ Ci of **8**. Variation of HPLC retention times was caused by the presence of acetonitrile in both urine and feces samples.

Figure SIII. Radio-HPLC chromatograms of **10** in saline before injection, in urine at 30 min and 120 min p.i., and in feces at 120 min p.i. Each mouse was administered with ~ 100 μ Ci of **10**.

Table SI. Biodistribution data and T/B ratios of **7** in the athymic nude mice bearing MDA-MB-435 human breast cancer xenografts. The organ uptake is expressed as %ID/g. Each data point represents an average of biodistribution data from four animals.

%ID/gram	30 min	60 min	Blocking (60min)	120 min
Blood	1.13 ± 0.21	0.73 ± 0.14	0.21 ± 0.03	0.30 ± 0.06
Brain	0.25 ± 0.03	0.18 ± 0.03	0.06 ± 0.06	0.19 ± 0.05
Eyes	2.05 ± 0.49	2.11 ± 0.21	0.13 ± 0.02	1.69 ± 0.25
Heart	3.57 ± 1.06	2.71 ± 0.32	0.15 ± 0.06	2.05 ± 0.42
Intestine	13.00 ± 2.35	9.55 ± 2.12	0.47 ± 0.11	9.38 ± 3.43
Kidney	20.90 ± 3.49	15.45 ± 0.73	5.26 ± 0.77	10.74 ± 2.23
Liver	4.20 ± 0.42	3.24 ± 0.47	0.19 ± 0.02	2.68 ± 0.46
Lungs	6.70 ± 0.80	4.97 ± 0.31	0.40 ± 0.12	4.43 ± 0.22
Muscle	3.13 ± 1.04	2.30 ± 0.18	0.25 ± 0.09	1.60 ± 0.32
Spleen	3.85 ± 0.67	3.32 ± 0.82	0.28 ± 0.05	2.37 ± 0.35
MDA435	8.48 ± 0.59	7.86 ± 2.23	0.55 ± 0.04	9.11 ± 1.83
MDA435/Blood	7.67 ± 1.49	10.81 ± 2.45	2.68 ± 0.29	30.85 ± 7.95
MDA435/Liver	2.03 ± 0.25	2.46 ± 0.80	2.84 ± 0.48	3.39 ± 0.34
MDA435/Lungs	1.29 ± 0.24	1.60 ± 0.54	1.43 ± 0.40	2.05 ± 0.39
MDA435/Muscle	2.84 ± 0.93	3.42 ± 0.96	2.29 ± 0.64	5.57 ± 0.69

Table SII. Biodistribution data and T/B ratios of **8** in the athymic nude mice bearing MDA-MB-435 human breast cancer xenografts. The organ uptake is expressed as %ID/g. Each data point represents an average of biodistribution data from four animals.

%ID/gram	30 min	60 min	120 min
Blood	1.09 ± 0.20	0.51 ± 0.05	0.38 ± 0.10
Brain	0.22 ± 0.04	0.19 ± 0.06	0.14 ± 0.03
Eyes	2.05 ± 0.30	1.86 ± 0.67	1.44 ± 0.23
Heart	2.83 ± 0.58	1.81 ± 0.38	1.43 ± 0.37
Intestine	10.52 ± 1.41	6.57 ± 1.41	7.11 ± 2.11
Kidney	17.47 ± 2.00	10.78 ± 2.04	8.01 ± 0.68
Liver	3.28 ± 0.44	2.62 ± 0.42	2.47 ± 0.25
Lungs	5.95 ± 0.59	3.84 ± 0.70	3.16 ± 0.68
Muscle	2.33 ± 0.61	1.40 ± 0.17	1.05 ± 0.42
Spleen	3.06 ± 0.84	2.21 ± 0.32	2.06 ± 0.59
MDA-MB-435	8.34 ± 0.39	7.85 ± 0.94	7.60 ± 0.68
Tumor/Blood Ratio	8.30 ± 1.13	15.33 ± 1.60	20.66 ± 5.04
Tumor /Liver Ratio	3.05 ± 1.15	3.14 ± 0.42	3.08 ± 0.23
Tumor Lung Ratio	1.57 ± 0.23	2.19 ± 0.37	2.53 ± 0.52
Tumor /Muscle Ratio	4.32 ± 1.41	5.73 ± 1.07	7.49 ± 2.39

Table SIII. Biodistribution data and T/B ratios of **7** in the athymic nude mice bearing U87MG human glioma xenografts. The organ uptake is expressed as %ID/g. Each data point represents an average of biodistribution data from four animals.

%ID/gram	30 min	60 min	120 min
Blood	1.49 ± 0.31	0.56 ± 0.08	0.27 ± 0.04
Brain	0.28 ± 0.04	0.23 ± 0.07	0.17 ± 0.03
Eyes	2.59 ± 0.52	2.18 ± 0.49	1.76 ± 0.31
Heart	3.90 ± 0.49	2.63 ± 0.29	1.96 ± 0.65
Intestine	15.57 ± 5.22	12.90 ± 4.87	9.02 ± 2.95
Kidney	23.33 ± 2.78	15.92 ± 1.18	9.99 ± 0.61
Liver	4.82 ± 0.49	3.24 ± 0.15	3.35 ± 0.54
Lungs	8.02 ± 0.44	6.14 ± 0.96	4.05 ± 0.58
Muscle	2.72 ± 0.33	1.91 ± 0.26	1.25 ± 0.10
Spleen	5.06 ± 0.39	3.44 ± 0.51	3.83 ± 0.64
U87MG	13.43 ± 0.98	11.02 ± 2.34	7.74 ± 1.25
Tumor/Blood Ratio	9.19 ± 1.79	19.75 ± 2.19	29.02 ± 4.68
Tumor /Liver Ratio	2.85 ± 0.29	3.39 ± 0.61	2.39 ± 0.50
Tumor Lung Ratio	1.70 ± 0.18	1.77 ± 0.27	2.00 ± 0.43
Tumor /Muscle Ratio	4.86 ± 0.31	5.68 ± 0.50	6.32 ± 1.21

Table SIV. Biodistribution data and T/B ratios of **10** in the athymic nude mice bearing U87MG human glioma xenografts. The organ uptake is expressed as %ID/g. Each data point represents an average of biodistribution data from four animals.

%ID/gram	30 min	60 min	120 min
Blood	1.53 ± 0.40	0.91 ± 0.29	0.25 ± 0.09
Brain	0.17 ± 0.02	0.11 ± 0.02	0.10 ± 0.01
Eyes	1.49 ± 0.51	0.88 ± 0.15	0.53 ± 0.11
Heart	1.66 ± 0.38	1.12 ± 0.33	0.60 ± 0.12
Intestine	10.03 ± 6.10	4.93 ± 2.00	3.49 ± 0.89
Kidney	10.88 ± 2.02	7.24 ± 2.72	3.75 ± 0.48
Liver	3.40 ± 0.54	2.67 ± 0.66	2.22 ± 0.32
Lungs	5.04 ± 0.79	3.23 ± 0.68	1.76 ± 0.56
Muscle	1.89 ± 0.42	1.36 ± 0.45	0.64 ± 0.13
Spleen	3.77 ± 0.80	2.85 ± 0.72	2.22 ± 0.73
U87MG	6.70 ± 1.59	5.62 ± 1.12	3.03 ± 0.54
Tumor/Blood Ratio	4.42 ± 0.48	6.03 ± 1.51	13.08 ± 3.84
Tumor /Liver Ratio	1.95 ± 0.26	1.98 ± 0.42	1.40 ± 0.16
Tumor Lung Ratio	1.32 ± 0.15	1.69 ± 0.32	1.90 ± 0.43
Tumor /Muscle Ratio	3.49 ± 1.01	4.00 ± 1.01	4.98 ± 1.37

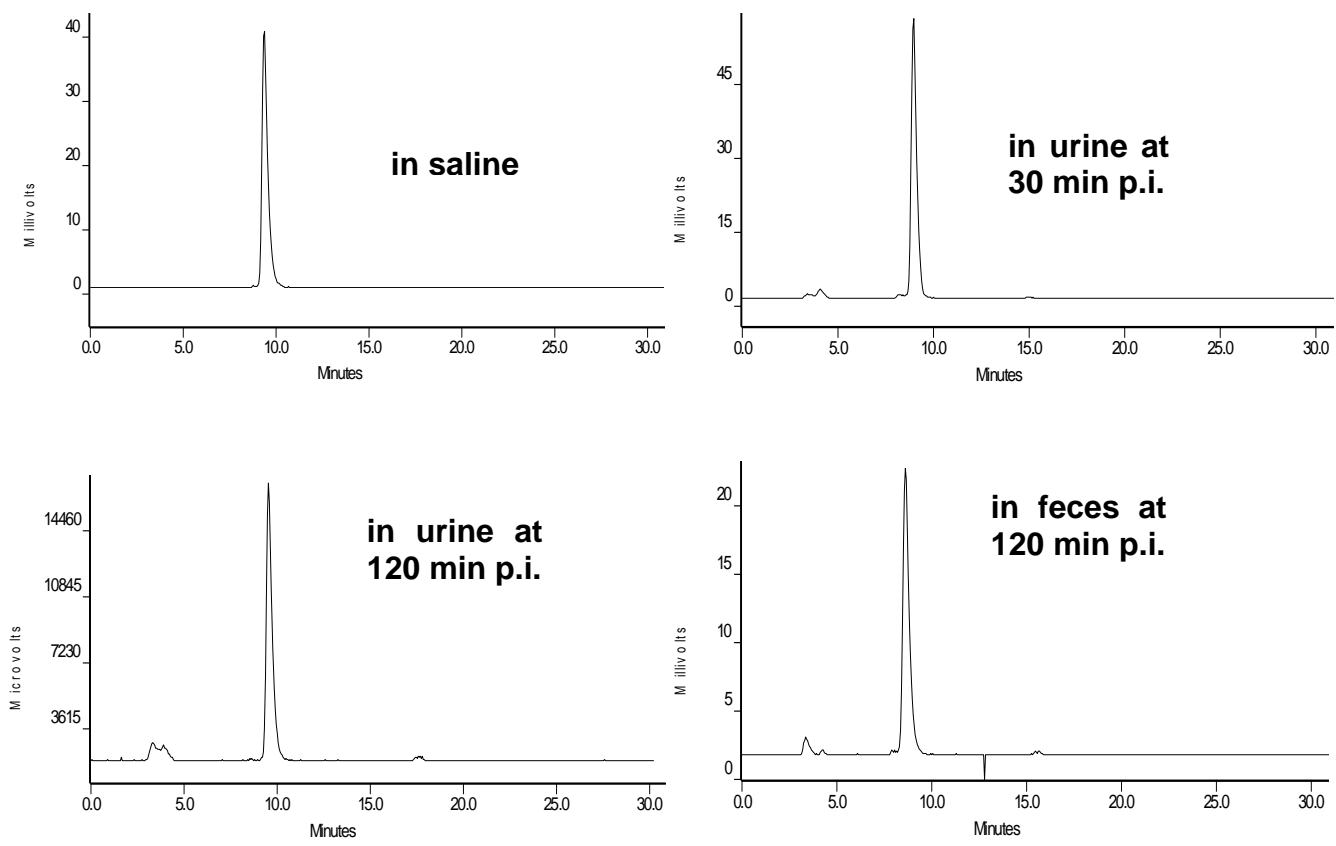


Fig. SI

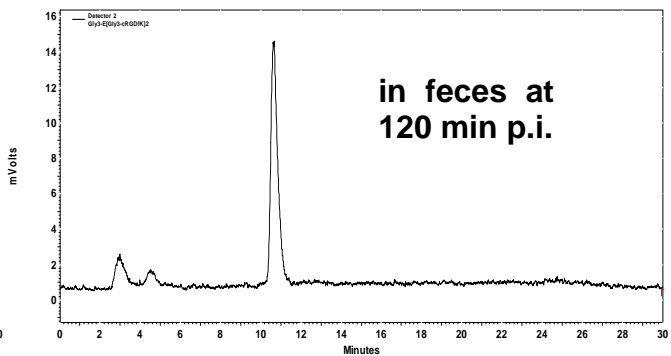
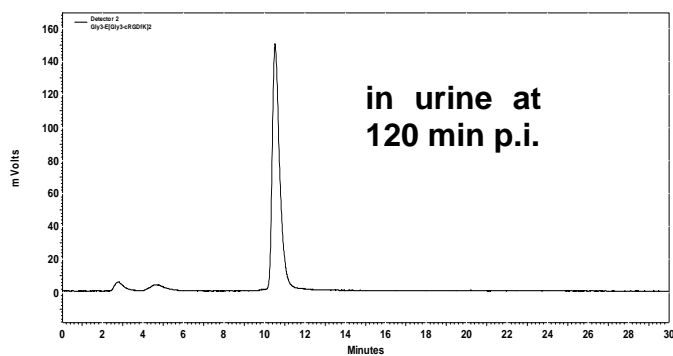
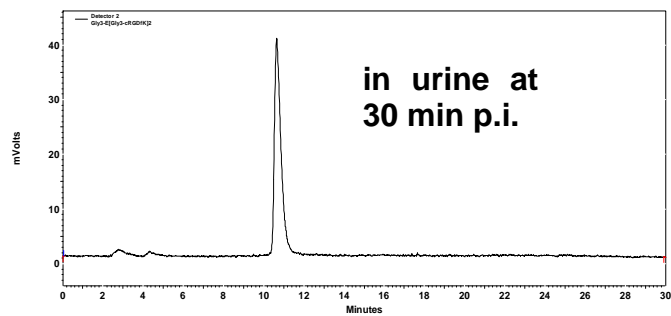
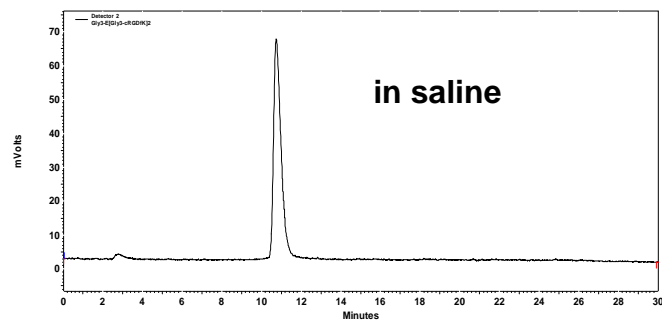


Fig. SII

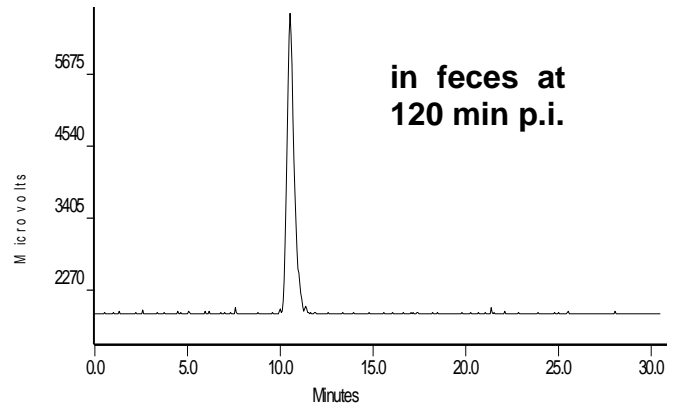
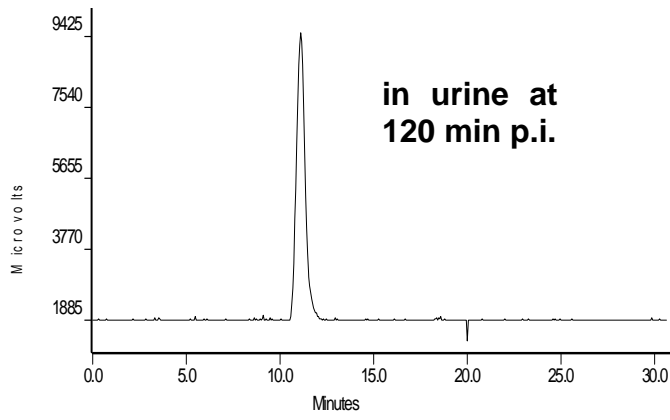
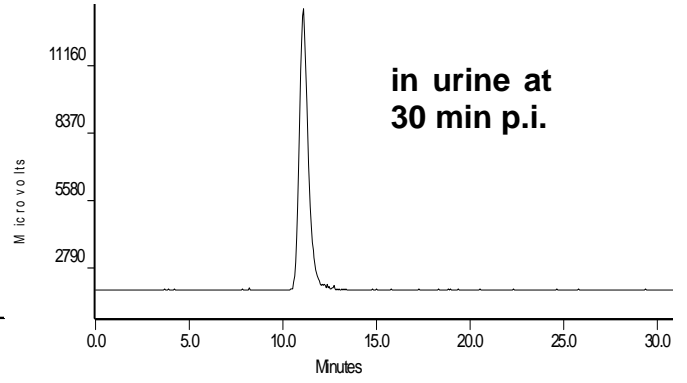
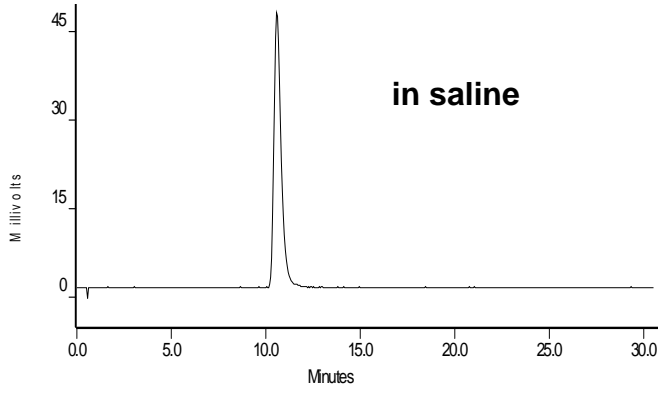


Fig. SIII