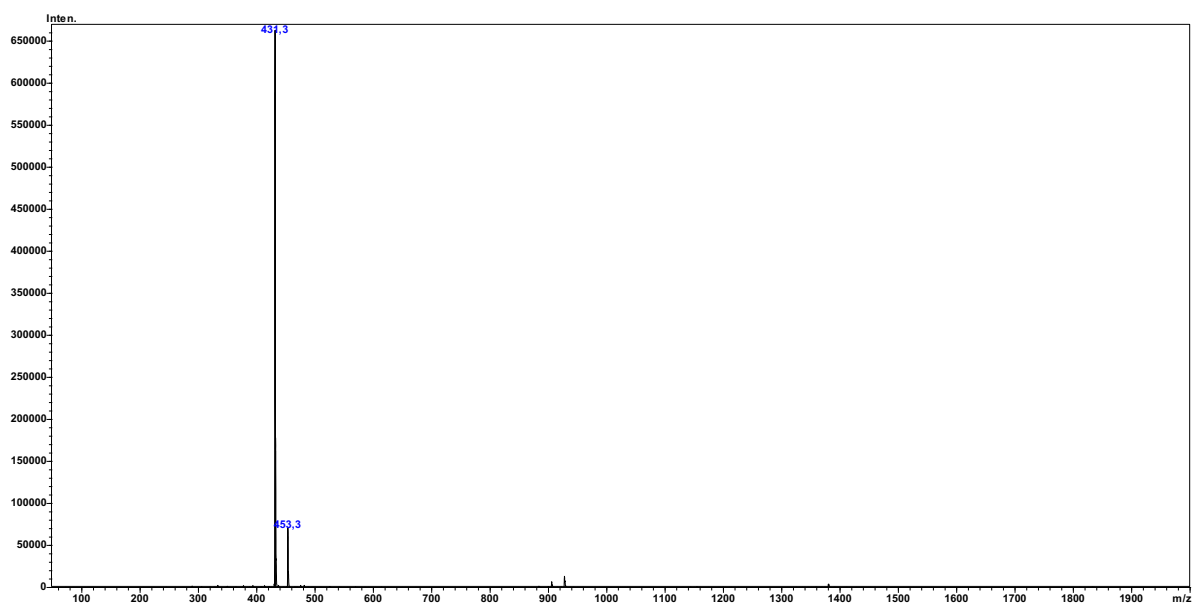


Supplemental Information

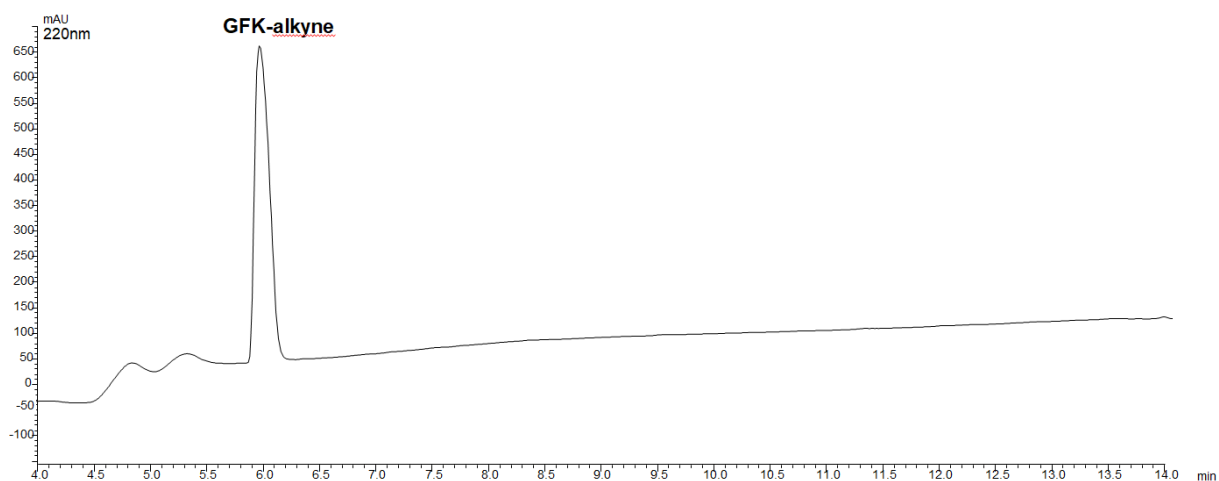
**The importance of tyrosines in multimers of cyclic RGD  
nonapeptides: towards  $\alpha\beta6$ -integrin targeted  
radiotherapeutics**

Neil Gerard Quigley, Maximilian Alexander Zierke, Beatrice Stefanie Ludwig, Frauke Richter, Nghia  
Nguyen, Falco Reissig, Jakub Šimeček, Susanne Kossatz\*, Johannes Notni\*

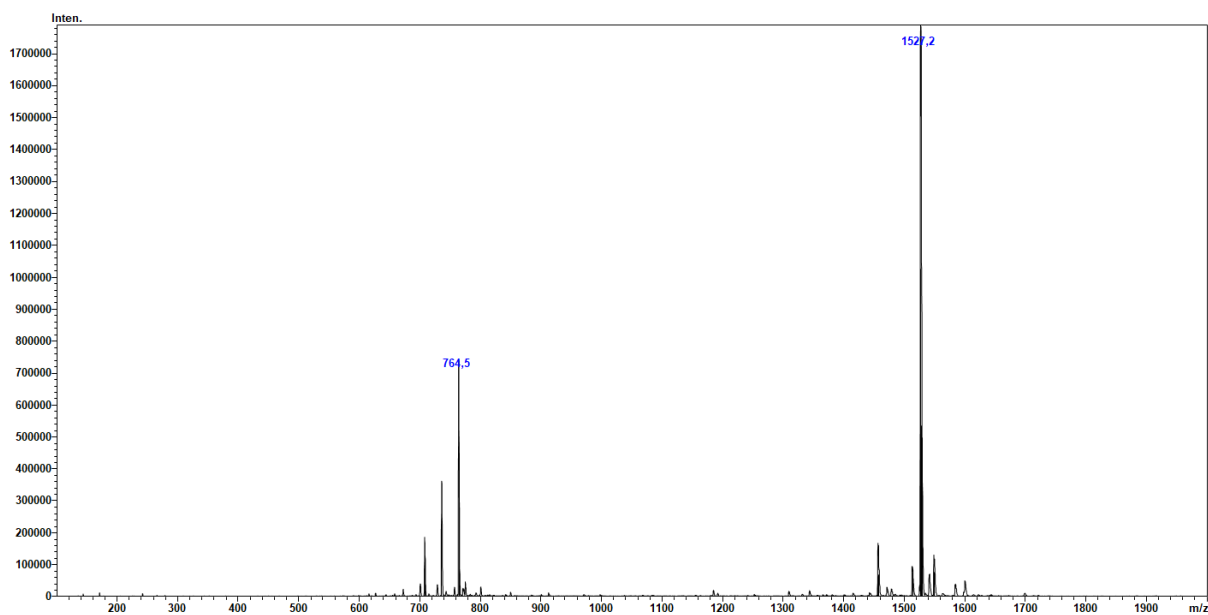
# 1. HPLC and ESI-MS data



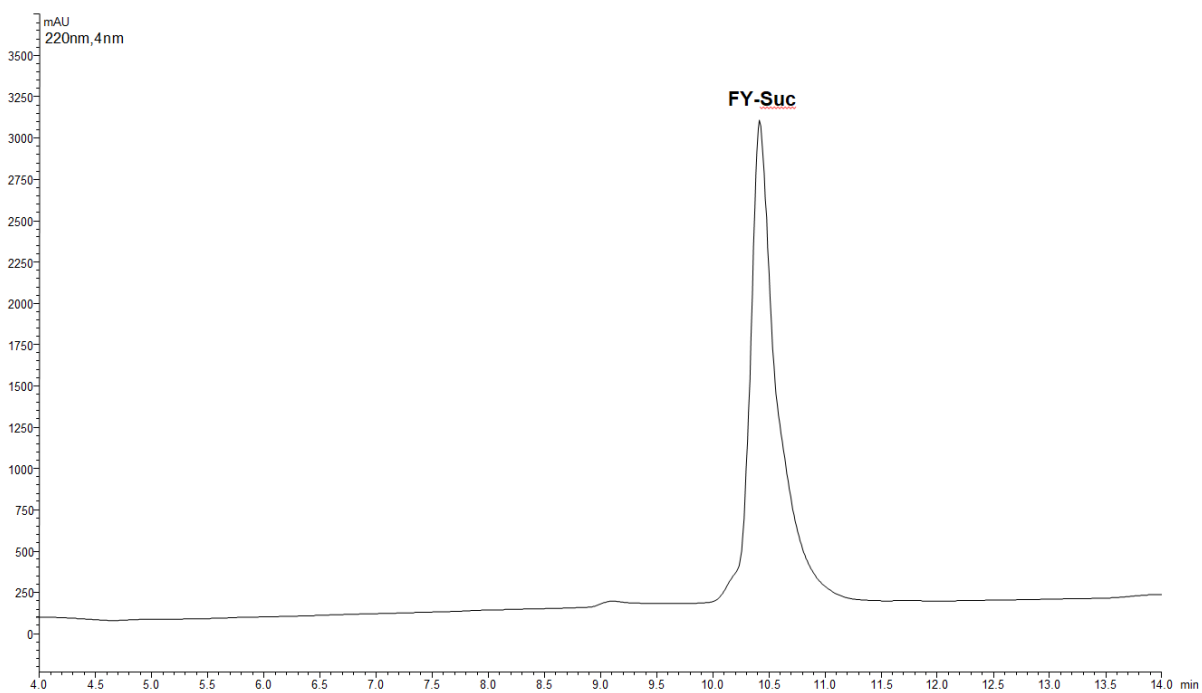
**Figure S1.** ESI-MS of **GFK-alkyne**; m/z corresponds to molecular composition as follows: 431.3  $[M+H]^+$ , 453.3  $[M+Na]^+$ .



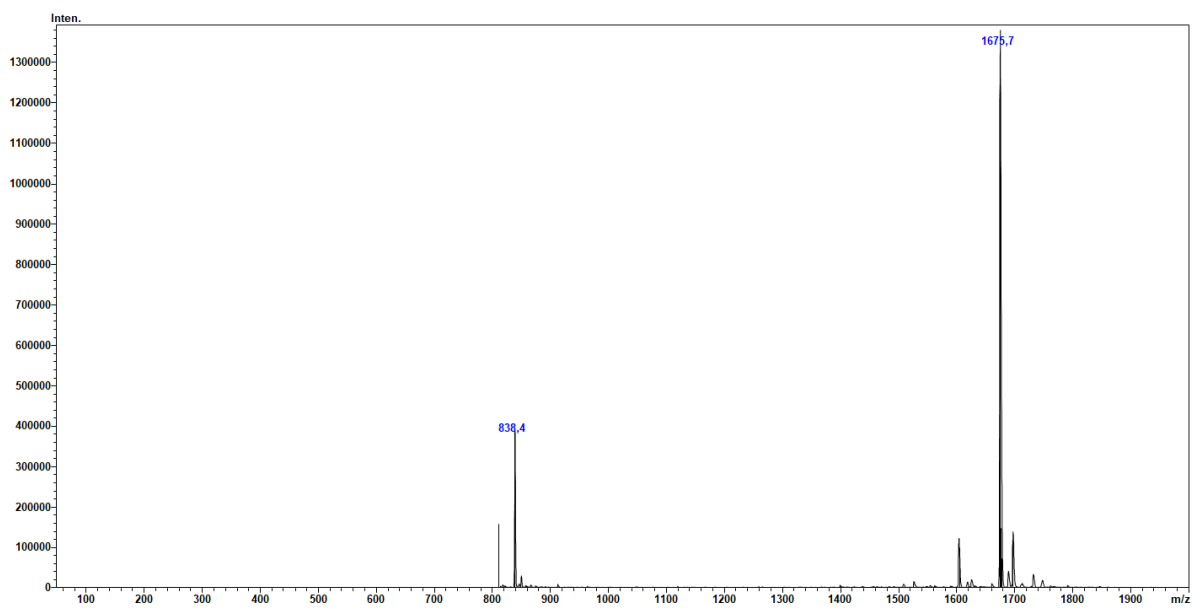
**Figure S2.** RP-HPLC of **GFK-alkyne** using analytical column AC2; 0.5 mL/min; gradient: 10–90% B in 15 min;  $t_R$  = 6.0 min.



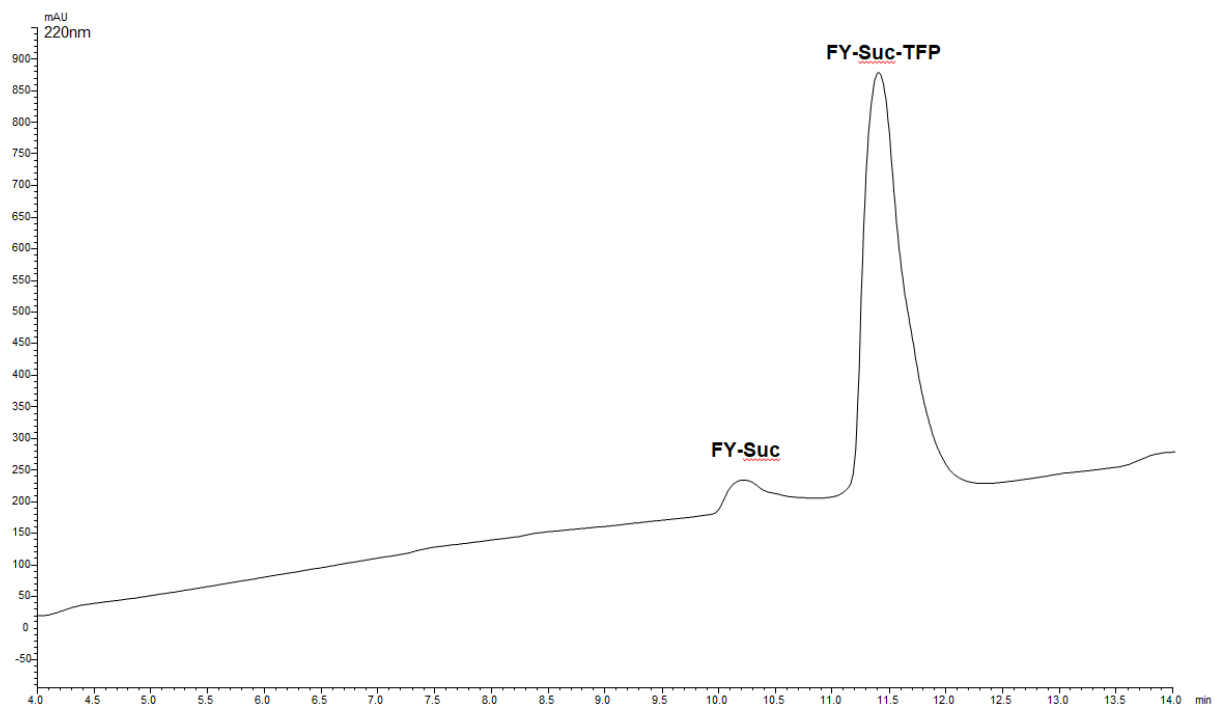
**Figure S3.** ESI-MS of **FY-Suc**; m/z corresponds to molecular composition as follows: 1527.2  $[M+H]^+$ , 764.5  $[M+2H]^{2+}$ .



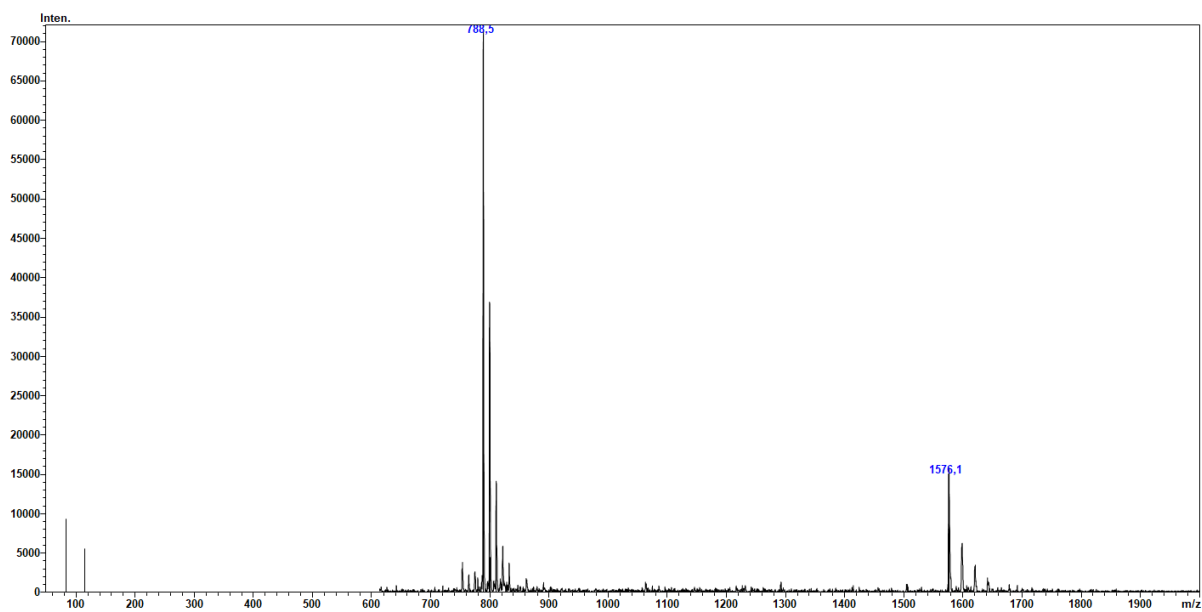
**Figure S4.** RP-HPLC of **FY-Suc** using analytical column AC2; 0.5 mL/min; gradient: 5–95 % B in 15 min;  $t_R$  = 10.5 min.



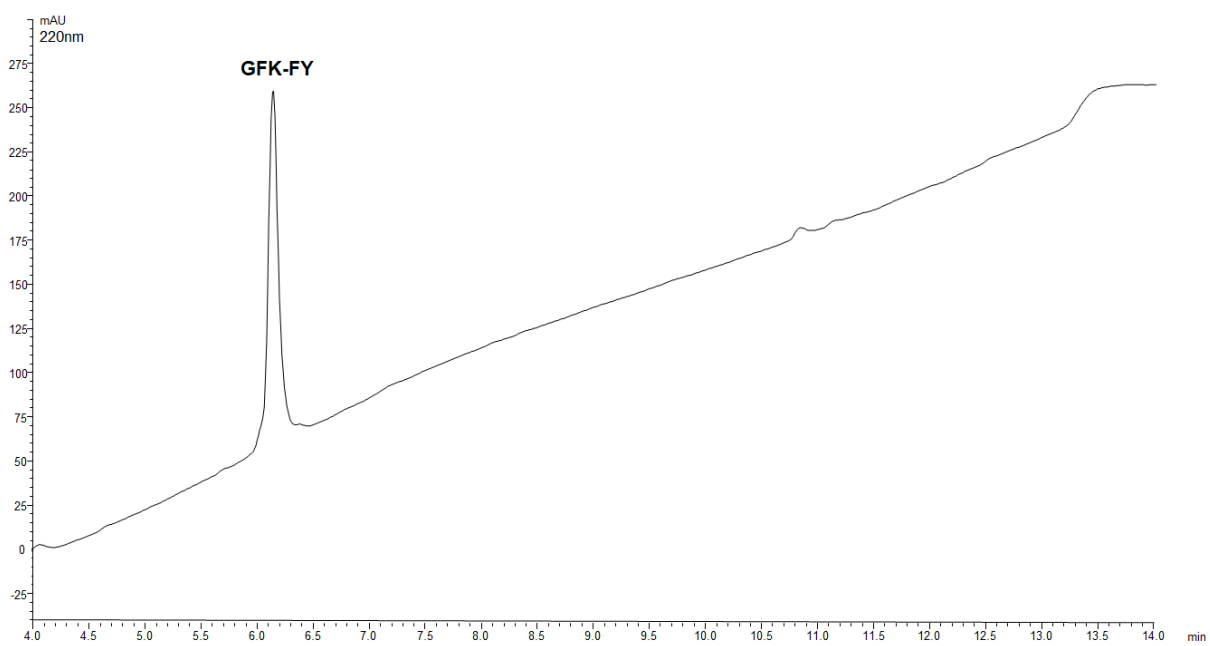
**Figure S5.** ESI-MS of **FY-Suc-TFP**. m/z corresponds to molecular composition as follows: 1675.7 [M+H]<sup>+</sup>, 838.4 [M+2H]<sup>2+</sup>.



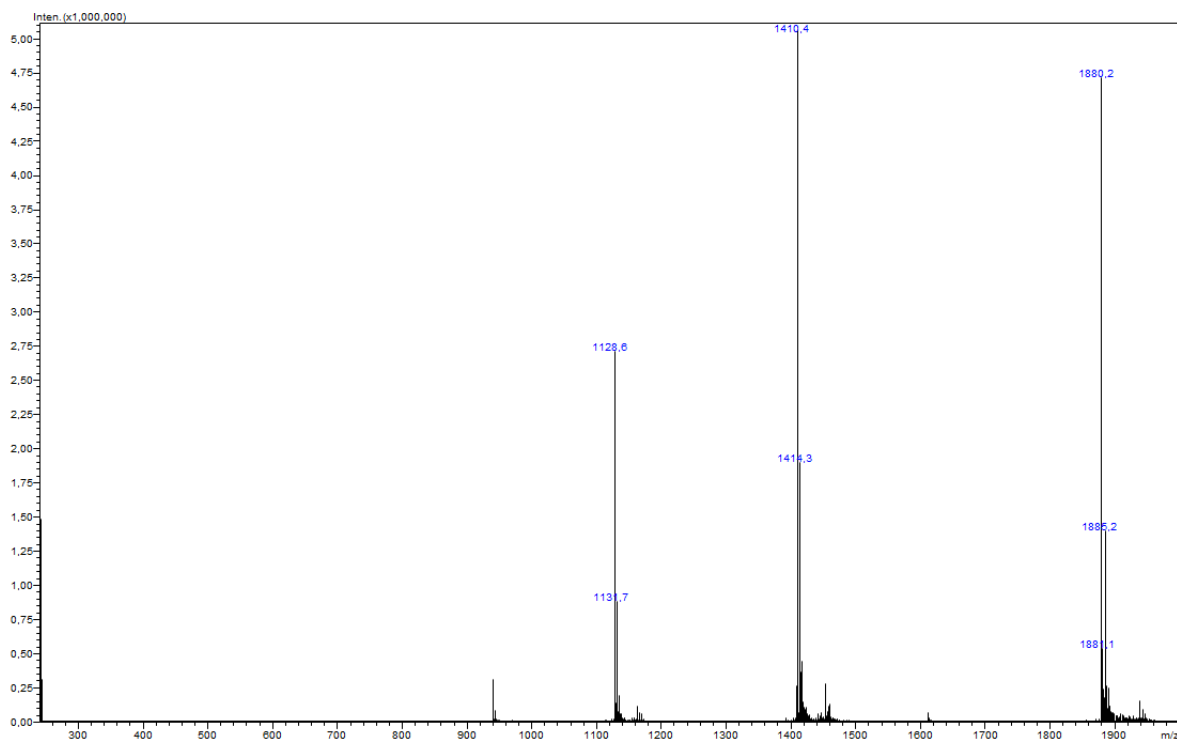
**Figure S6.** RP-HPLC of **FY-Suc-TFP** using analytical column AC2; 0.5 mL/min; gradient: 10–90 % B in 15 min;  $t_R = 11.5$  min.



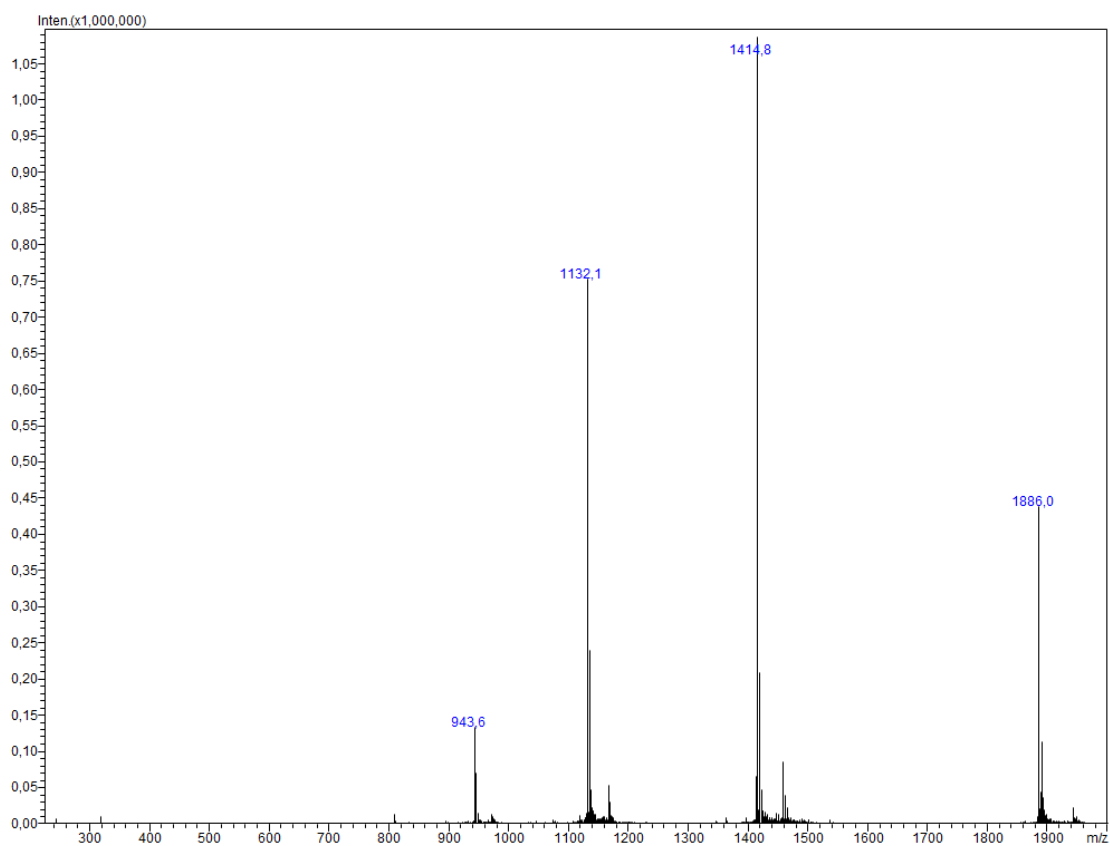
**Figure S7.** ESI-MS of **GFK-FY**.  $m/z$  corresponds to molecular composition as follows: 1576.1  $[M+H^+]^+$ , 788.5  $[M+2H^+]^{2+}$ .



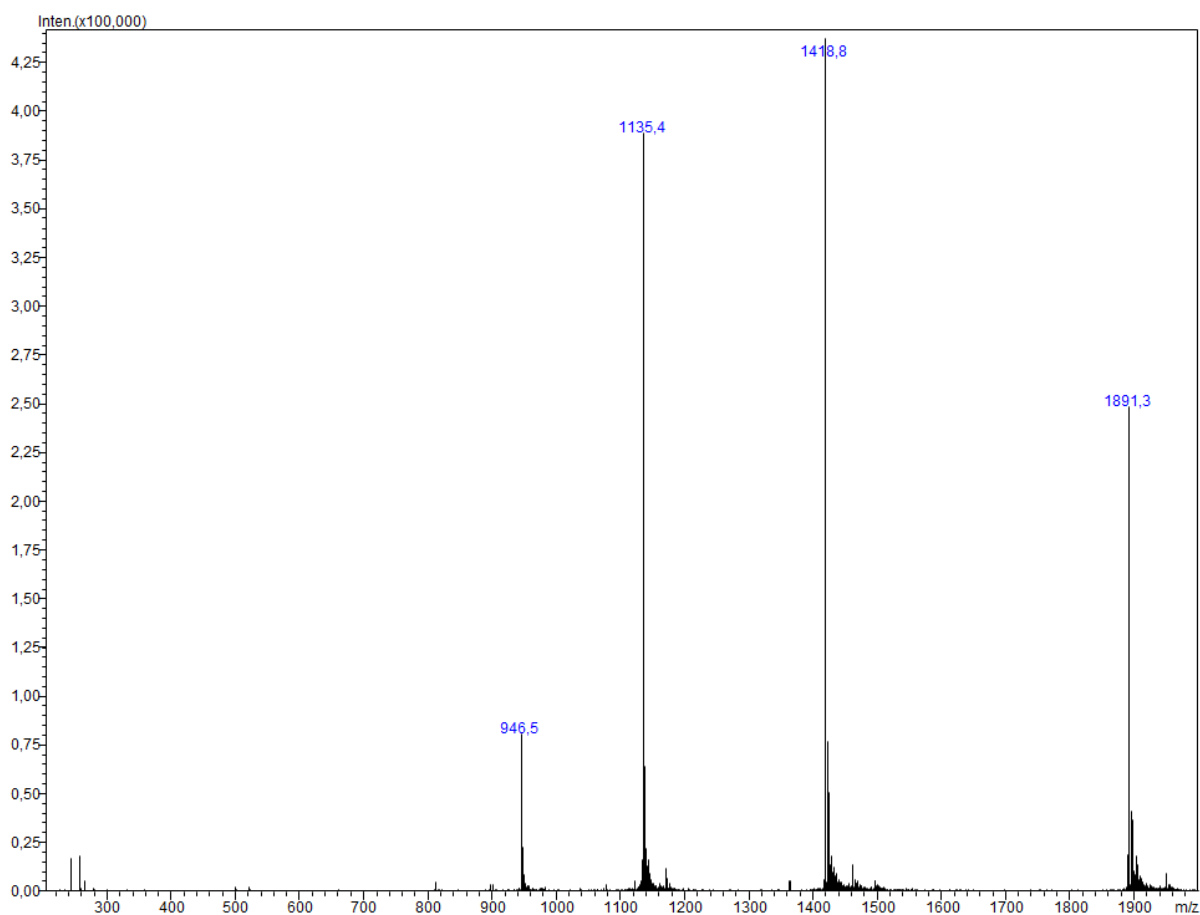
**Figure S8.** RP-HPLC of **GFK-FY** using analytical column AC2; 0.5 mL/min; gradient: 10–90 % B in 15 min;  $t_R = 6.2$  min.



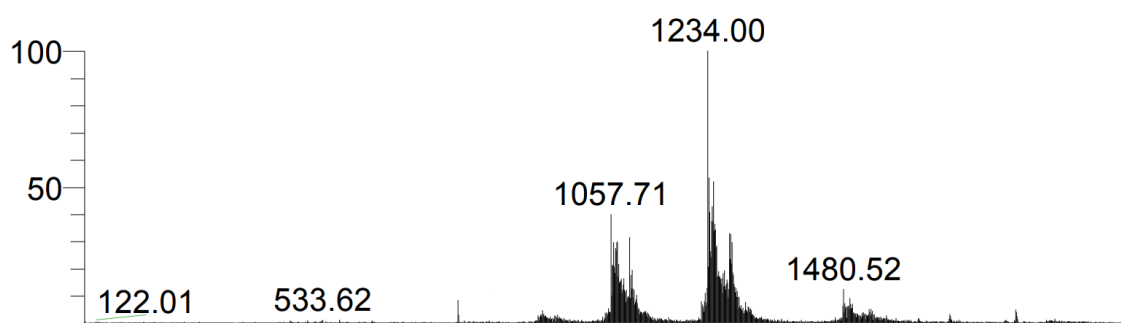
**Figure S9.** ESI-MS of **Y0**. m/z corresponds to molecular composition as follows: 1880.2  $[M+K^++2H^+]^{3+}$ , 1410.4  $[M+K^++3H^+]^{4+}$ , 1128.6  $[M+K^++4H^+]^{5+}$ .



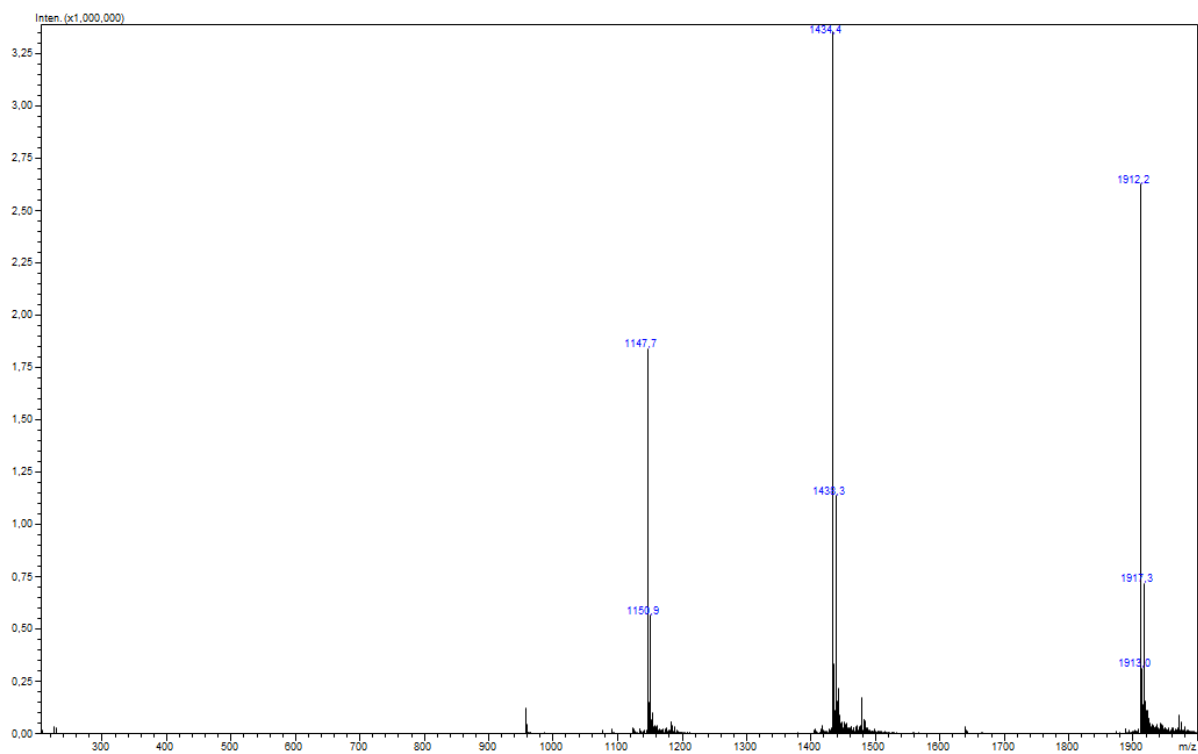
**Figure S10.** ESI-MS of **Y3**. m/z corresponds to molecular composition as follows: 1886.0  $[M+3H^+]^{3+}$ , 1414.8  $[M+4H^+]^{4+}$ , 1132.1  $[M+5H^+]^{5+}$ , 943.6  $[M+6H^+]^{6+}$ .



**Figure S11.** ESI-MS of **Y4**.  $m/z$  corresponds to molecular composition as follows: 1891.3  $[M+3H^+]^{3+}$ , 1418.9  $[M+4H^+]^{4+}$ , 1135.1  $[M+5H^+]^{5+}$ , 946.5  $[M+6H^+]^{6+}$ .

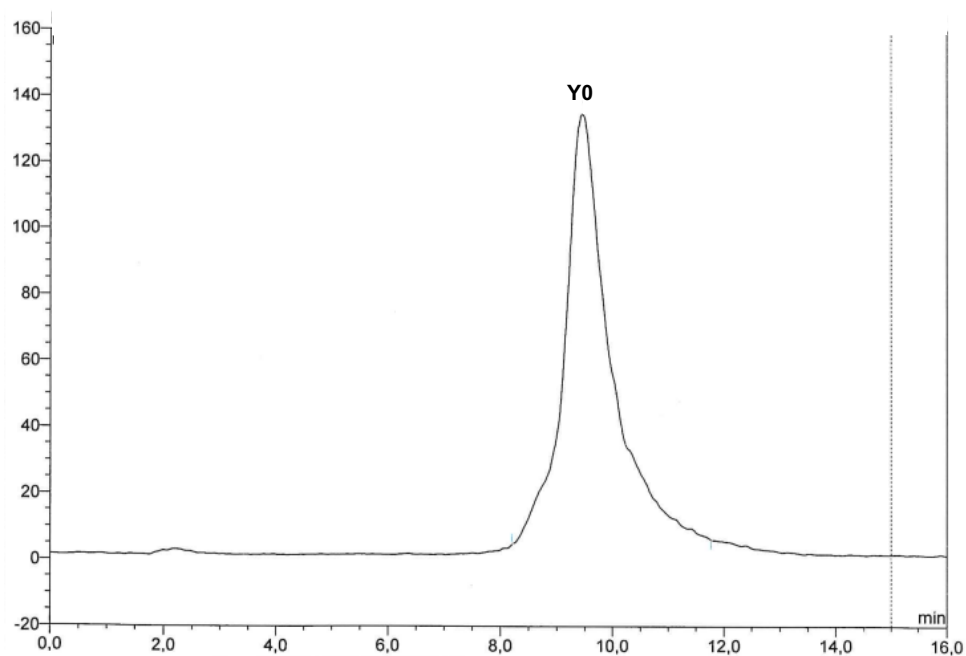


**Figure S12.** ESI-MS of **GFK-Y4**.  $m/z$  corresponds to molecular composition as follows: 1480.52  $[M+5H^+]^{5+}$ , 1234.00  $[M+6H^+]^{6+}$ , 1057.71  $[M+7H^+]^{7+}$ .



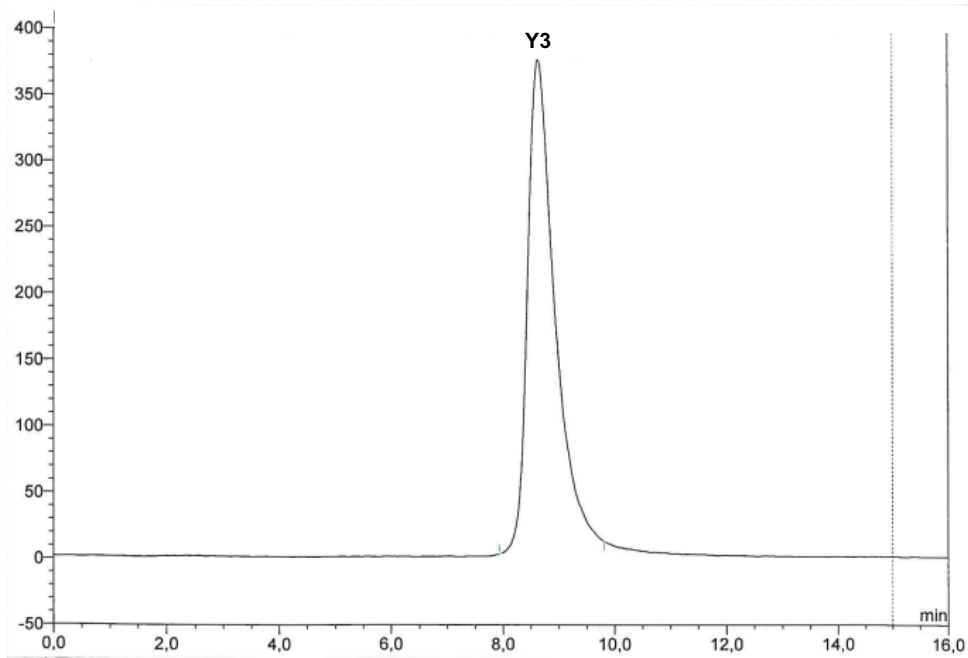
**Figure S13.** ESI-MS of **Y8**. m/z corresponds to molecular composition as follows: 1912.2  $[M+3H]^{3+}$ , 1434.4  $[M+4H]^{4+}$ , 1147.7  $[M+5H]^{5+}$ .

## 2. Radio-HPLC

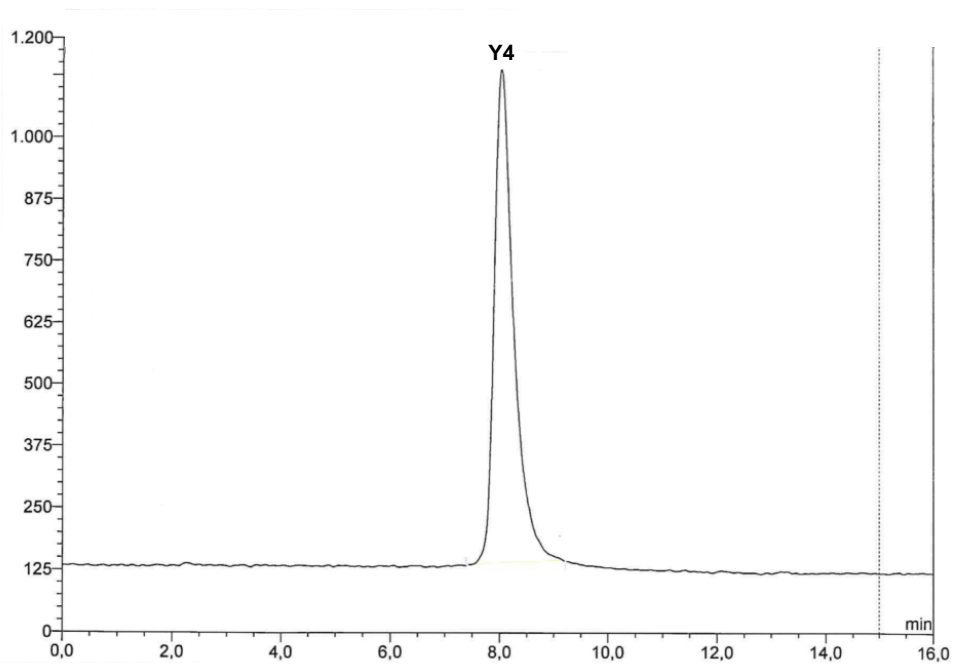


**Figure S14.** Radio-RP-HPLC of  $^{177}\text{Lu}$ -Y0 performed using analytical column AC1; 1 mL/min; gradient: 0–99 % B in 15 min;  $t_R = 9.5$  min. Radiochemical purity: 98%.

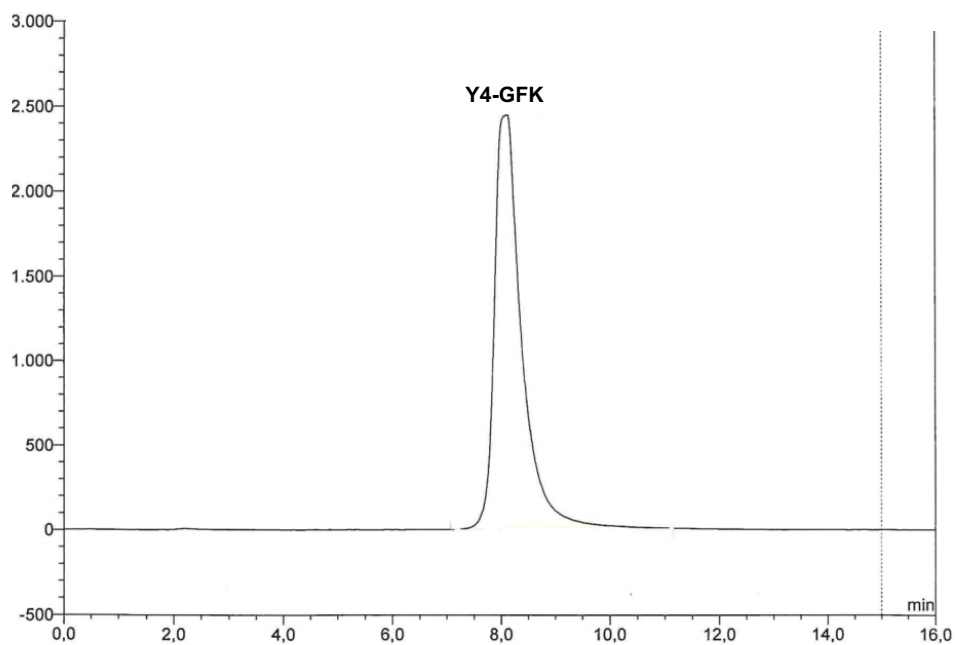




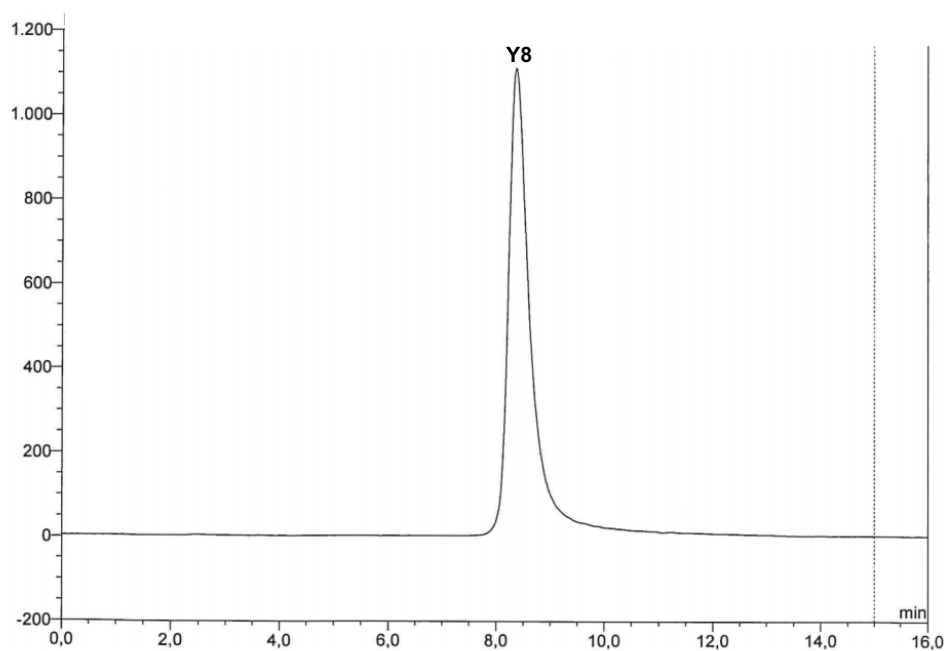
**Figure S15.** Radio-RP-HPLC of  $^{177}\text{Lu}$ -**Y3** performed using analytical column AC1; 1 mL/min; gradient: 0–99 % B in 15 min;  $t_R = 8.6$  min. Radiochemical purity = 100%.



**Figure S16.** Radio-RP-HPLC of  $^{177}\text{Lu}$ -**Y4** performed using analytical column AC1; 1 mL/min; gradient: 0–99 % B in 15 mins;  $t_R = 8$  min. Radiochemical purity = 100%.

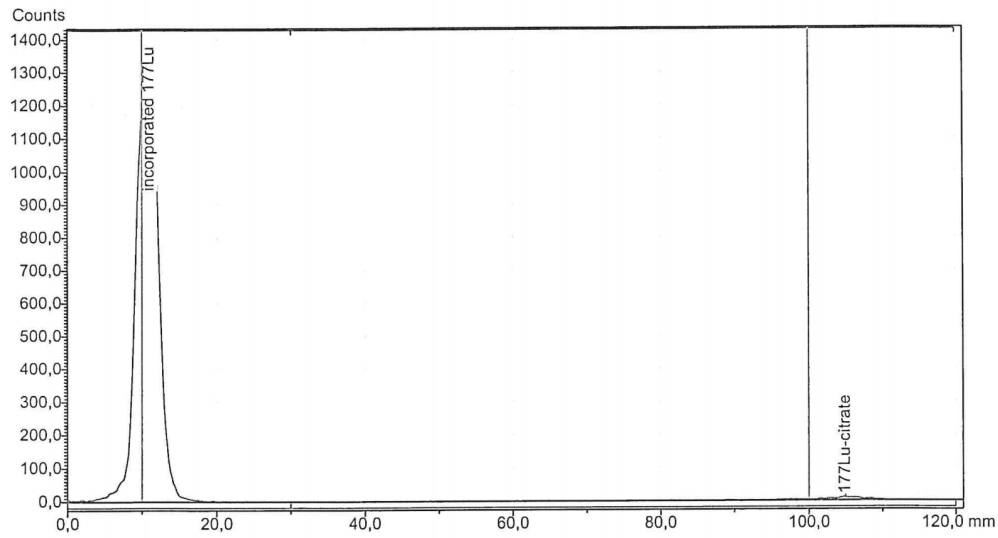


**Figure S17.** Radio-RP-HPLC of  $^{177}\text{Lu}$ -GFK-Y4 performed using analytical column AC1; 1 mL/min; gradient: 0–99 % B 15 min;  $t_R = 8.1$  min. Radiochemical purity = 100%.



**Figure S18.** Radio-RP-HPLC of  $^{177}\text{Lu}$ -Y8 performed using analytical column AC1; 1 mL/min; gradient: 0–99 % B in 15 min;  $t_R = 8.4$  min. Radiochemical purity = 100%.

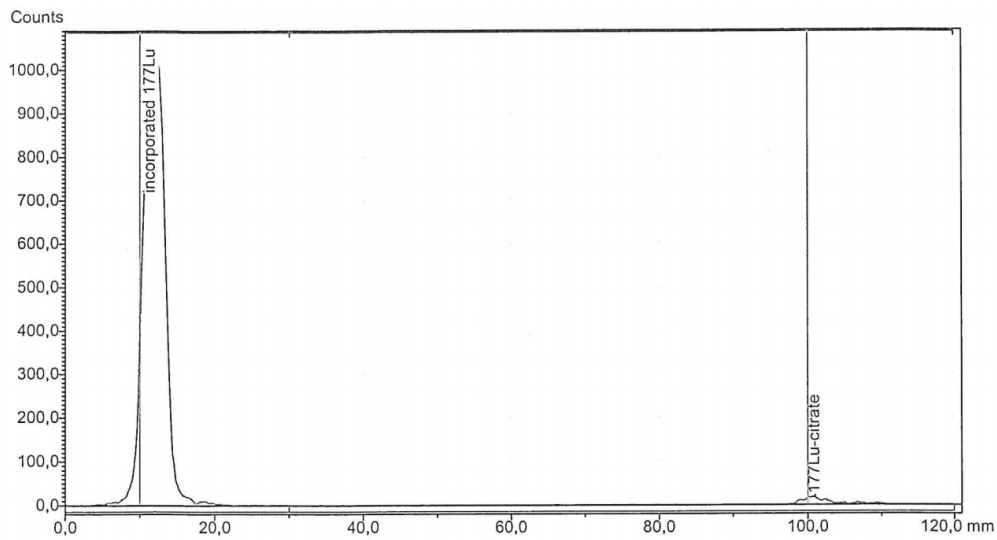
### 3. Radio-TLC



Regions: TLC

Name	Start (mm)	End (mm)	Retention (RF)	Height (Counts)	Area (Counts)	%ROI (%)	%Total (%)
incorporated 177Lu	0,0	30,0	0,0	1379,0	23718,0	98,60	98,60
177Lu-citrate	30,0	120,0	1,1	14,0	337,0	1,40	1,40
2 Peaks					24055,0	100,00	100,00

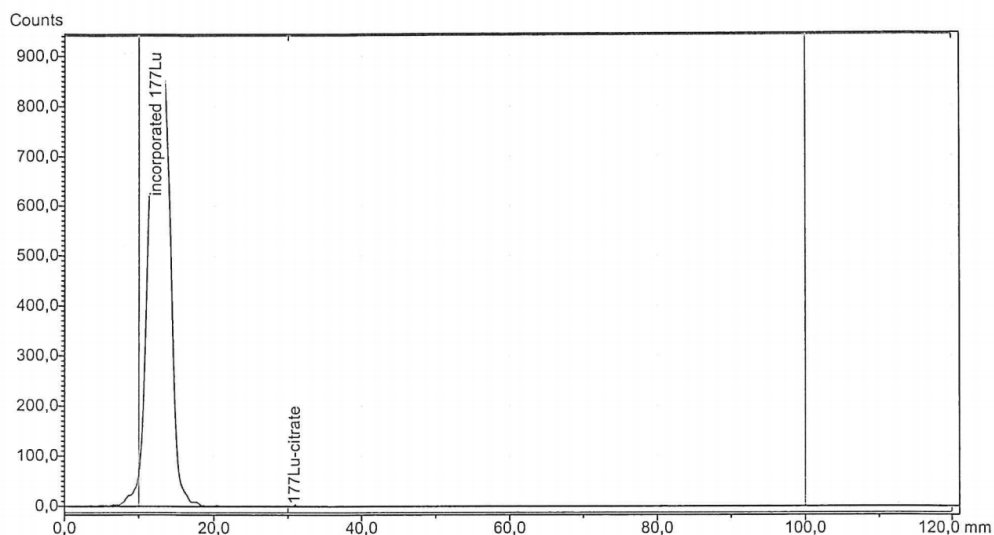
**Figure S19.** Radio-TLC for  $^{177}\text{Lu-Y0}$ ; mobile phase: 0.1 M trisodium citrate.



Regions: TLC

Name	Start (mm)	End (mm)	Retention (RF)	Height (Counts)	Area (Counts)	%ROI (%)	%Total (%)
incorporated 177Lu	0,0	30,0	0,0	1049,0	18362,0	97,72	97,72
177Lu-citrate	30,0	120,0	1,0	20,0	428,0	2,28	2,28
2 Peaks					18790,0	100,00	100,00

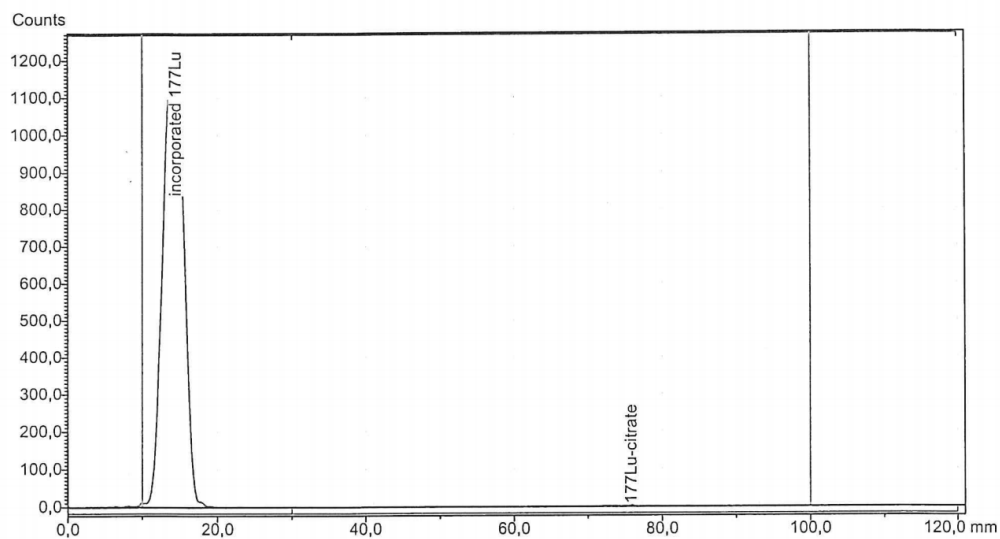
**Figure S20.** Radio-TLC for  $^{177}\text{Lu-Y3}$ ; mobile phase: 0.1 M trisodium citrate.



Regions: TLC

Name	Start (mm)	End (mm)	Retention (RF)	Height (Counts)	Area (Counts)	%ROI (%)	%Total (%)
incorporated 177Lu	0,0	30,0	0,0	908,0	15340,0	99,92	99,92
177Lu-citrate	30,0	120,0	0,2	3,0	12,0	0,08	0,08
2 Peaks					15352,0	100,00	100,00

**Figure S21.** Radio-TLC for  $^{177}\text{Lu-Y4}$ ; mobile phase: 0.1 M trisodium citrate.

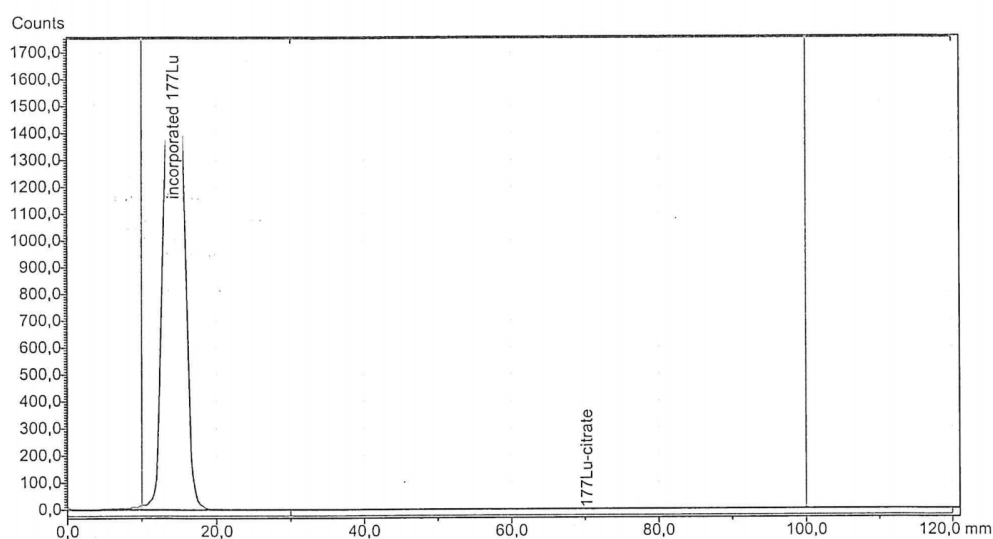


Regions: TLC

Name	Start (mm)	End (mm)	Retention (RF)	Height (Counts)	Area (Counts)	%ROI (%)	%Total (%)
incorporated 177Lu	0,0	30,0	0,1	1225,0	19340,0	99,78	99,78
177Lu-citrate	30,0	120,0	0,7	4,0	43,0	0,22	0,22
2 Peaks					19383,0	100,00	100,00

**Figure S22.** Radio-TLC for  $^{177}\text{Lu-GFK-Y4}$ ; mobile phase: 0.1 M trisodium citrate.

Chromatogram: TLC



Regions: TLC

Name	Start (mm)	End (mm)	Retention (RF)	Height (Counts)	Area (Counts)	%ROI (%)	%Total (%)
incorporated 177Lu	0,0	30,0	0,0	1690,0	27045,0	99,95	99,95
177Lu-citrate	30,0	120,0	0,7	1,0	14,0	0,05	0,05
2 Peaks					27059,0	100,00	100,00

**Figure S23.** Radio-TLC for  $^{177}\text{Lu-Y8}$ ; mobile phase: 0.1 M trisodium citrate.

## 4. Biodistribution data

**Table S1:** Biodistribution data for  $^{177}\text{Lu-Y0}$  ( $n = 4$ ;  $90 \pm 24$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y0}$	90 min p.i.	
	%IA/g	tumor/organ ratio
Blood	1.20 $\pm$ 0.23	2.7 $\pm$ 0.7
Heart (myocard)	1.13 $\pm$ 0.62	3.0 $\pm$ 0.5
Lung	3.59 $\pm$ 1.01	0.9 $\pm$ 0.1
Liver	5.03 $\pm$ 1.98	0.7 $\pm$ 0.2
Spleen	2.22 $\pm$ 1.11	1.6 $\pm$ 0.4
Pancreas	0.49 $\pm$ 0.13	6.7 $\pm$ 1.7
Stomach (empty)	4.15 $\pm$ 1.03	0.8 $\pm$ 0.2
Small intestine (empty)	1.67 $\pm$ 0.41	2.0 $\pm$ 0.6
Large intestine (empty)	3.00 $\pm$ 0.32	1.1 $\pm$ 0.4
Kidneys	208 $\pm$ 65	0.0 $\pm$ 0.0
Adrenals	1.36 $\pm$ 0.79	2.9 $\pm$ 1.3
Muscle	0.53 $\pm$ 0.13	6.0 $\pm$ 1.1
Bone	1.45 $\pm$ 0.57	2.4 $\pm$ 0.7
Tumor H2009	3.23 $\pm$ 1.17	

**Table S2:** Biodistribution data for  $^{177}\text{Lu-Y0}$  ( $n = 5$ ;  $92 \pm 11$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y0}$	3 d p.i.		
	Organ/Tissue	%IA/g	tumor/organ ratio
Blood	0.02 $\pm$ 0.00	97.5 $\pm$ 10.4	
Heart (myocard)	0.43 $\pm$ 0.07	4.3 $\pm$ 0.7	
Lung	1.22 $\pm$ 0.17	1.5 $\pm$ 0.1	
Liver	2.61 $\pm$ 0.42	0.7 $\pm$ 0.1	
Spleen	1.58 $\pm$ 0.26	1.1 $\pm$ 0.2	
Pancreas	0.31 $\pm$ 0.09	6.3 $\pm$ 1.9	
Stomach (empty)	2.63 $\pm$ 0.68	0.8 $\pm$ 0.3	
Small intestine (empty)	0.82 $\pm$ 0.25	2.2 $\pm$ 0.6	
Large intestine (empty)	1.19 $\pm$ 0.53	2.1 $\pm$ 1.5	
Kidneys	243 $\pm$ 56	0.0 $\pm$ 0.0	
Adrenals	0.82 $\pm$ 0.06	2.1 $\pm$ 0.1	
Muscle	0.29 $\pm$ 0.11	8.2 $\pm$ 6.4	
Bone	0.42 $\pm$ 0.14	5.0	2.4
Tumor H2009	1.72 $\pm$ 0.07		

**Table S3:** Biodistribution data for  $^{177}\text{Lu-Y3}$  ( $n = 3$ ;  $139 \pm 59$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y3}$	90 min p.i.		
	Organ/Tissue	%IA/g	tumor/organ ratio
Blood	1.11 $\pm$ 0.14	3.4 $\pm$ 0.4	
Heart (myocard)	0.65 $\pm$ 0.12	5.8 $\pm$ 0.7	
Lung	4.91 $\pm$ 0.51	0.8 $\pm$ 0.1	
Liver	7.59 $\pm$ 3.21	0.6 $\pm$ 0.3	
Spleen	8.50 $\pm$ 2.27	0.5 $\pm$ 0.1	
Pancreas	0.36 $\pm$ 0.05	10.3 $\pm$ 1.2	
Stomach (empty)	7.42 $\pm$ 0.32	0.5 $\pm$ 0.0	
Small intestine (empty)	2.49 $\pm$ 0.46	1.5 $\pm$ 0.2	
Large intestine (empty)	3.43 $\pm$ 0.68	1.1 $\pm$ 0.2	
Kidneys	141 $\pm$ 30	0.0 $\pm$ 0.0	
Adrenals	1.04 $\pm$ 0.44	3.9 $\pm$ 1.2	
Muscle	0.57 $\pm$ 0.10	6.6 $\pm$ 0.9	
Bone	1.51 $\pm$ 0.14	2.5	0.1
Tumor H2009	3.70 $\pm$ 0.16		

**Table S4:** Biodistribution data for  $^{177}\text{Lu-Y3}$  ( $n=5$ ;  $42 \pm 6$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y3}$	3 d p.i.	
Organ/Tissue	%IA/g	tumor/organ ratio
Blood	0.02 $\pm$ 0.00	128.6 $\pm$ 22.2
Heart (myocard)	0.22 $\pm$ 0.04	9.4 $\pm$ 2.6
Lung	1.22 $\pm$ 0.16	1.7 $\pm$ 0.4
Liver	1.17 $\pm$ 0.33	1.9 $\pm$ 0.6
Spleen	1.36 $\pm$ 0.54	1.7 $\pm$ 0.6
Pancreas	0.25 $\pm$ 0.17	10.6 $\pm$ 4.8
Stomach (empty)	4.76 $\pm$ 1.37	0.5 $\pm$ 0.2
Small intestine (empty)	0.37 $\pm$ 0.18	6.6 $\pm$ 3.2
Large intestine (empty)	1.34 $\pm$ 0.72	2.3 $\pm$ 1.9
Kidneys	250 $\pm$ 33	0.0 $\pm$ 0.0
Adrenals	0.27 $\pm$ 0.11	8.4 $\pm$ 3.8
Muscle	0.47 $\pm$ 0.23	5.3 $\pm$ 2.6
Bone	0.35 $\pm$ 0.17	6.6 2.5
Tumor H2009	2.03 $\pm$ 0.29	

**Table S5:** Biodistribution data for  $^{177}\text{Lu-Y4}$  ( $n=4$ ;  $43 \pm 7$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y4}$	90 min p.i.	
Organ/Tissue	%IA/g	tumor/organ ratio
Blood	1.33 $\pm$ 0.10	5.2 $\pm$ 0.6
Heart (myocard)	0.74 $\pm$ 0.19	9.6 $\pm$ 1.6
Lung	6.74 $\pm$ 0.71	1.0 $\pm$ 0.1
Liver	1.06 $\pm$ 0.13	6.6 $\pm$ 1.3
Spleen	4.71 $\pm$ 1.04	1.5 $\pm$ 0.4
Pancreas	0.37 $\pm$ 0.02	18.6 $\pm$ 2.2
Stomach (empty)	10.65 $\pm$ 3.09	0.7 $\pm$ 0.2
Small intestine (empty)	3.05 $\pm$ 1.08	2.6 $\pm$ 1.5
Large intestine (empty)	6.99 $\pm$ 0.20	1.0 $\pm$ 0.1
Kidneys	219 $\pm$ 17	0.0 $\pm$ 0.0
Adrenals	0.52 $\pm$ 0.20	13.9 $\pm$ 3.4
Muscle	1.00 $\pm$ 0.44	8.2 $\pm$ 4.1
Bone	1.84 $\pm$ 0.20	3.8 0.4
Tumor H2009	6.91 $\pm$ 0.73	

**Table S6:** Biodistribution data for  $^{177}\text{Lu-Y4}$  ( $n = 5$ ;  $64 \pm 6$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y4}$	3 d p.i.	
Organ/Tissue	%IA/g	tumor/organ ratio
Blood	0.02 $\pm$ 0.01	108.2 $\pm$ 40.0
Heart (myocard)	0.27 $\pm$ 0.08	8.2 $\pm$ 2.3
Lung	1.21 $\pm$ 0.24	1.7 $\pm$ 0.3
Liver	0.88 $\pm$ 0.33	2.6 $\pm$ 0.8
Spleen	1.31 $\pm$ 0.33	1.7 $\pm$ 0.4
Pancreas	0.19 $\pm$ 0.04	11.3 $\pm$ 1.3
Stomach (empty)	3.88 $\pm$ 0.80	0.6 $\pm$ 0.1
Small intestine (empty)	0.26 $\pm$ 0.06	8.2 $\pm$ 1.7
Large intestine (empty)	1.33 $\pm$ 0.26	1.6 $\pm$ 0.3
Kidneys	203 $\pm$ 18	0.0 $\pm$ 0.0
Adrenals	0.90 $\pm$ 0.66	4.1 $\pm$ 3.3
Muscle	0.28 $\pm$ 0.12	9.1 $\pm$ 5.4
Bone	0.55 $\pm$ 0.07	3.8 0.8
Tumor H2009	2.07 $\pm$ 0.16	

**Table S7:** Biodistribution data for  $^{177}\text{Lu-GFK-Y4}$  ( $n = 4$ ;  $118 \pm 40$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-GFK-Y4}$	90 min p.i.	
Organ/Tissue	%IA/g	tumor/organ ratio
Blood	0.44 $\pm$ 0.09	4.3 $\pm$ 2.0
Heart (myocard)	0.32 $\pm$ 0.01	5.5 $\pm$ 1.6
Lung	2.88 $\pm$ 0.37	0.6 $\pm$ 0.2
Liver	1.16 $\pm$ 0.56	1.7 $\pm$ 0.6
Spleen	0.89 $\pm$ 0.22	2.1 $\pm$ 0.9
Pancreas	0.14 $\pm$ 0.01	12.2 $\pm$ 3.7
Stomach (empty)	3.29 $\pm$ 0.53	0.6 $\pm$ 0.2
Small intestine (empty)	0.73 $\pm$ 0.14	2.5 $\pm$ 1.0
Large intestine (empty)	1.76 $\pm$ 0.55	1.1 $\pm$ 0.7
Kidneys	274 $\pm$ 75	0.0 $\pm$ 0.0
Adrenals	0.95 $\pm$ 0.66	2.2 $\pm$ 0.9
Muscle	0.26 $\pm$ 0.06	7.2 $\pm$ 3.0
Bone	0.49 $\pm$ 0.03	3.6 1.1
Tumor H2009	1.74 $\pm$ 0.48	



**Table S8:** Biodistribution data for  $^{177}\text{Lu-GFK-Y4}$  ( $n = 5$ ;  $70 \pm 39$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-GFK-Y4}$	3 d p.i.		
	Organ/Tissue	%IA/g	tumor/organ ratio
Blood	0.02 $\pm$ 0.01	56.1 $\pm$ 25.7	
Heart (myocard)	0.12 $\pm$ 0.03	6.9 $\pm$ 2.1	
Lung	0.50 $\pm$ 0.26	1.8 $\pm$ 0.7	
Liver	0.48 $\pm$ 0.22	2.0 $\pm$ 1.1	
Spleen	0.86 $\pm$ 0.37	1.0 $\pm$ 0.4	
Pancreas	0.08 $\pm$ 0.02	9.9 $\pm$ 4.1	
Stomach (empty)	2.42 $\pm$ 0.83	0.4 $\pm$ 0.1	
Small intestine (empty)	0.15 $\pm$ 0.04	5.6 $\pm$ 1.9	
Large intestine (empty)	0.78 $\pm$ 0.42	1.4 $\pm$ 1.0	
Kidneys	169 $\pm$ 37	0.0 $\pm$ 0.0	
Adrenals	0.25 $\pm$ 0.10	3.7 $\pm$ 0.9	
Muscle	0.13 $\pm$ 0.06	6.9 $\pm$ 3.9	
Bone	0.25 $\pm$ 0.06	3.2	1.2
Tumor H2009	0.77 $\pm$ 0.19		

**Table S9:** Biodistribution data ( min p.i.) for  $^{177}\text{Lu-Y8}$  without ( $n = 4$ ;  $124 \pm 24$  pmol) and with ( $n = 2$ ) addition of 50 nmol of non-labeled compound, in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y8}$	90 min p.i.		+ 50 nmol cold	
	Organ/Tissue	%IA/g	tumor/organ ratio	10 min prior to activity
Blood	2.54 $\pm$ 0.56	2.4 $\pm$ 0.5	1.06 $\pm$ 0.31	
Heart (myocard)	1.01 $\pm$ 0.19	5.9 $\pm$ 1.3	0.64 $\pm$ 0.14	
Lung	5.63 $\pm$ 0.44	1.0 $\pm$ 0.1	3.39 $\pm$ 0.70	
Liver	1.16 $\pm$ 0.15	5.1 $\pm$ 1.0	0.70 $\pm$ 0.06	
Spleen	8.41 $\pm$ 1.93	0.7 $\pm$ 0.3	4.99 $\pm$ 0.34	
Pancreas	0.42 $\pm$ 0.08	14.3 $\pm$ 3.6	0.19 $\pm$ 0.01	
Stomach (empty)	8.26 $\pm$ 0.91	0.7 $\pm$ 0.2	1.19 $\pm$ 0.30	
Small intestine (empty)	3.00 $\pm$ 0.61	2.1 $\pm$ 0.8	0.62 $\pm$ 0.09	
Large intestine (empty)	3.66 $\pm$ 1.06	1.8 $\pm$ 0.8	0.89 $\pm$ 0.14	
Kidneys	166 $\pm$ 26	0.0 $\pm$ 0.0	178 $\pm$ 7	
Adrenals	0.71 $\pm$ 0.20	8.9 $\pm$ 3.7	0.53 $\pm$ 0.21	
Muscle	0.87 $\pm$ 0.35	7.4 $\pm$ 2.7	0.20 $\pm$ 0.08	
Bone	3.24	0.20	1.8	0.4
Tumor H2009	5.89 $\pm$ 1.09		1.71 $\pm$ 0.41	

**Table S10:** Biodistribution data for  $^{177}\text{Lu-Y8}$  ( $n = 5$ ;  $154 \pm 14$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y8}$		24 h p.i.	
Organ/Tissue	%IA/g	tumor/organ ratio	
Blood	0.04 $\pm$ 0.01	59.6	$\pm$ 9.9
Heart (myocard)	0.16 $\pm$ 0.03	15.2	$\pm$ 3.6
Lung	1.20 $\pm$ 0.19	2.1	$\pm$ 0.7
Liver	0.98 $\pm$ 0.40	2.7	$\pm$ 1.2
Spleen	1.89 $\pm$ 0.77	1.4	$\pm$ 0.6
Pancreas	0.14 $\pm$ 0.02	18.4	$\pm$ 6.0
Stomach (empty)	3.84 $\pm$ 1.33	0.7	$\pm$ 0.4
Small intestine (empty)	1.03 $\pm$ 0.27	2.5	$\pm$ 1.0
Large intestine (empty)	1.46 $\pm$ 0.55	1.8	$\pm$ 0.7
Kidneys	235 $\pm$ 49	0.0	$\pm$ 0.0
Adrenals	0.25 $\pm$ 0.08	10.2	$\pm$ 2.8
Muscle	0.36 $\pm$ 0.34	9.5	$\pm$ 4.5
Bone	0.68 $\pm$ 0.08	3.6	1.0
Tumor H2009	2.42 $\pm$ 0.58		

**Table S11:** Biodistribution data for  $^{177}\text{Lu-Y8}$  ( $n = 8$ ;  $199 \pm 84$  pmol), in H2009 bearing SCID mice. Data are given as averages  $\pm$  standard deviation. %IA/g = percent injected activity per gram tissue.

$^{177}\text{Lu-Y8}$		3 d p.i.	
Organ/Tissue	%IA/g	tumor/organ ratio	
Blood	0.03 $\pm$ 0.01	67.0	$\pm$ 27.8
Heart (myocard)	0.13 $\pm$ 0.02	12.2	$\pm$ 4.0
Lung	0.73 $\pm$ 0.13	2.2	$\pm$ 0.8
Liver	0.70 $\pm$ 0.14	2.4	$\pm$ 1.0
Spleen	2.01 $\pm$ 0.71	1.0	$\pm$ 0.6
Pancreas	0.12 $\pm$ 0.04	14.9	$\pm$ 7.1
Stomach (empty)	2.65 $\pm$ 1.11	0.8	$\pm$ 0.5
Small intestine (empty)	0.16 $\pm$ 0.05	11.4	$\pm$ 5.7
Large intestine (empty)	0.48 $\pm$ 0.17	3.6	$\pm$ 1.4
Kidneys	237 $\pm$ 42	0.0	$\pm$ 0.0
Adrenals	0.22 $\pm$ 0.04	4.5	$\pm$ 2.6
Muscle	0.23 $\pm$ 0.11	8.4	$\pm$ 4.1
Bone	0.57 $\pm$ 0.21	3.4	1.8
Tumor H2009	1.67 $\pm$ 0.56		