

Supplementary Figure S1. Ex vivo biodistribution over time expressed as percentage of injected activity (%IA) of [^{153}Sm]Sm-DOTA-TATE in BALB/c mice. Values represent mean \pm standard deviation ($n = 3-4$).

Supplementary Table S1. Biodistribution data expressed as percentage of injected activity (%IA)* of [^{153}Sm]Sm-DOTA-TATE in male BALB/c mice. Values represent mean \pm standard deviation ($n = 3-4$).

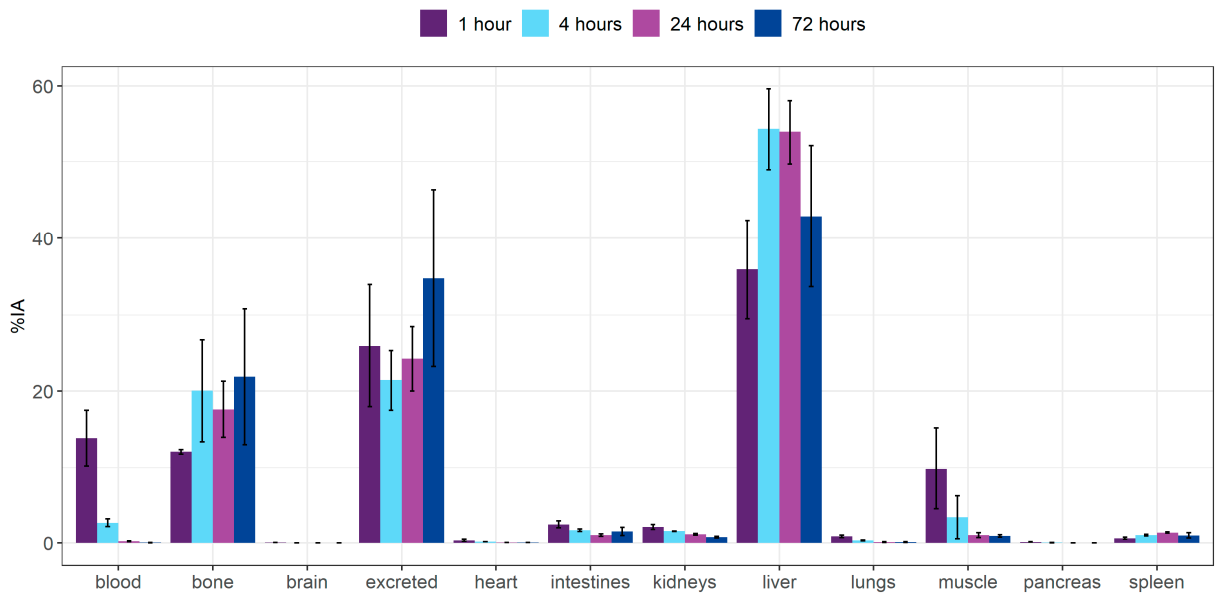
	%IA			
	1 h	4 h	24 h	72 h
Blood	0.7 \pm 0.3	0.2 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Bone	0.8 \pm 0.4	0.6 \pm 0.2	0.7 \pm 0.1	0.6 \pm 0.1
Brain	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Excreted	82.0 \pm 4.8	90.2 \pm 0.7	96.6 \pm 0.4	97.8 \pm 0.2
Heart	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Intestines	0.6 \pm 0.1	0.5 \pm 0.0	0.2 \pm 0.0	0.1 \pm 0.0
Kidneys	3.8 \pm 0.4	3.2 \pm 0.1	0.7 \pm 0.2	0.2 \pm 0.0
Liver	2.34 \pm 0.2	2.5 \pm 0.8	1.6 \pm 0.2	1.2 \pm 0.2
Lungs	0.1 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Muscle	3.8 \pm 1.8	1.1 \pm 0.5	0.1 \pm 0.0	0.1 \pm 0.0
Pancreas	0.1 \pm 0.0	0.1 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Spleen	0.3 \pm 0.1	0.3 \pm 0.0	0.3 \pm 0.1	0.1 \pm 0.0
Stomach	0.2 \pm 0.0	0.1 \pm 0.1	0.0 \pm 0.0	0.0 \pm 0.0

* Percentage of injected activity calculated as (cpm in organ/total cpm) \times 100

Supplementary Table S2. Biodistribution data expressed as standard uptake value (SUV)* of [¹⁵³Sm]Sm-DOTA-TATE in male BALB/c mice. Values represent mean ± standard deviation (n = 3-4).

	SUV			
	1 h	4 h	24 h	72 h
Blood	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Bone	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.0	0.1 ± 0.0
Brain	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Heart	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Kidneys	2.1 ± 0.2	1.8 ± 0.1	0.4 ± 0.1	0.1 ± 0.0
Liver	0.4 ± 0.1	0.5 ± 0.2	0.3 ± 0.0	0.2 ± 0.0
Lungs	0.2 ± 0.0	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Muscle	0.6 ± 0.3	0.2 ± 0.1	0.0 ± 0.0	0.0 ± 0.0
Pancreas	0.2 ± 0.0	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Spleen	0.8 ± 0.2	0.8 ± 0.2	0.9 ± 0.3	0.3 ± 0.1

SUV = Standardized uptake value. Calculated as (radioactivity in cpm in organ/weight of organ in grams) / total cpm recovered/body weight).

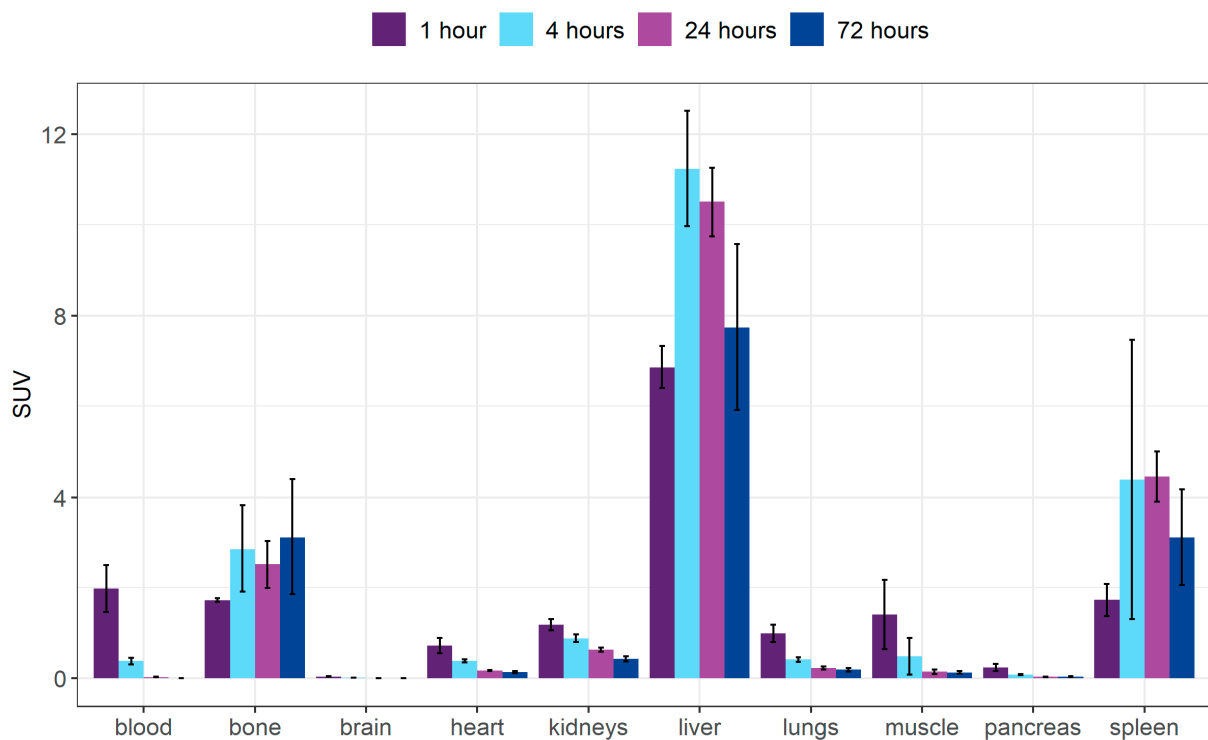


Supplementary Figure S2. Ex vivo biodistribution over time expressed as percentage of injected activity (%IA) of [¹⁵³Sm]SmCl₃ in BALB/c mice. Values represent mean ± standard deviation (n = 3-4).

Supplementary Table S3: Biodistribution data time expressed as percentage of injected activity (%IA)* of [¹⁵³Sm]SmCl₃ in male BALB/c mice. Values represent mean ± standard deviation (*n* = 3-4).

	%IA			
	1 h	4 h	24 h	72 h
Blood	13.8 ± 3.6	2.7 ± 0.5	0.2 ± 0.0	0.0 ± 0.0
Bone	12.1 ± 0.3	20.1 ± 6.7	17.6 ± 3.7	21.9 ± 8.9
Brain	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Excreted	26.0 ± 8.0	21.4 ± 3.9	24.2 ± 4.2	34.8 ± 11.6
Heart	0.4 ± 0.1	0.2 ± 0.0	0.1 ± 0.0	0.1 ± 0.0
Intestines	2.4 ± 0.5	1.7 ± 0.2	1.0 ± 0.2	1.5 ± 0.5
Kidneys	2.1 ± 0.3	1.6 ± 0.0	1.1 ± 0.1	0.8 ± 0.1
Liver	35.9 ± 6.4	54.3 ± 5.3	53.9 ± 4.2	42.9 ± 9.2
Lungs	0.9 ± 0.2	0.3 ± 0.0	0.1 ± 0.0	0.1 ± 0.0
Muscle	9.8 ± 5.3	3.4 ± 2.8	1.0 ± 0.3	0.9 ± 0.2
Pancreas	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Spleen	0.6 ± 0.1	1.0 ± 0.1	1.4 ± 0.1	1.0 ± 0.3
Stomach	0.5 ± 0.2	0.2 ± 0.0	0.2 ± 0.2	0.2 ± 0.1

* Percentage of injected activity calculated as (cpm in organ/total cpm) × 100.

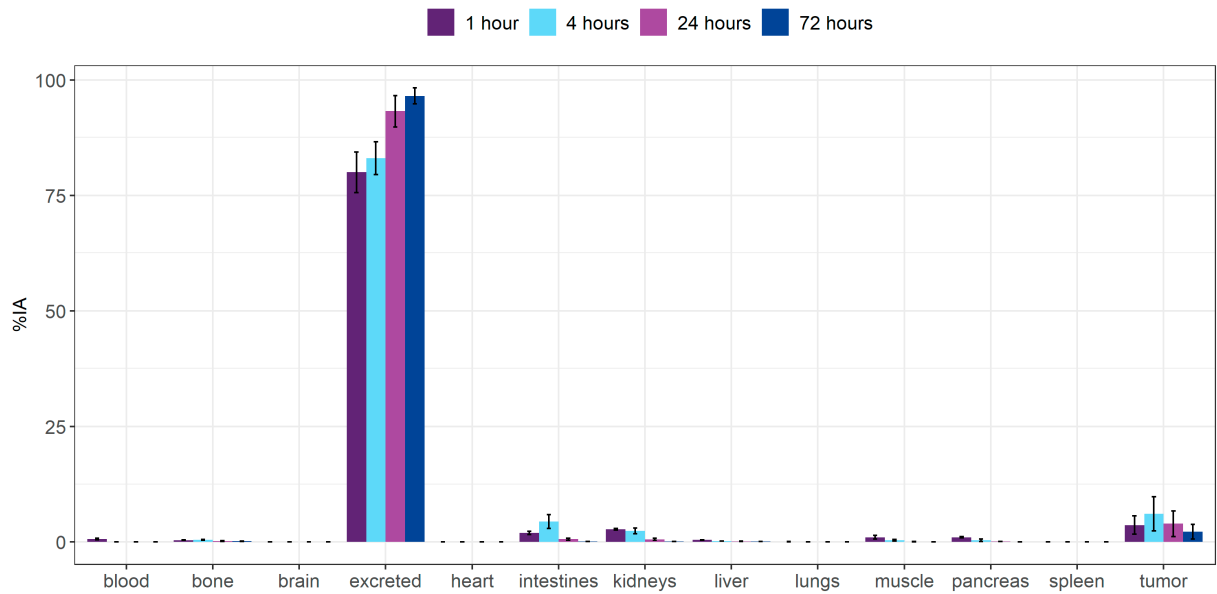


Supplementary Figure S3. Ex vivo biodistribution over time expressed as standard uptake value (SUV) of [¹⁵³Sm]SmCl₃ in BALB/c mice. Values represent mean ± standard deviation (*n* = 3-4).

Supplementary Table S4: Biodistribution data expressed as standard uptake value (SUV)* of [¹⁵³Sm]SmCl₃ in male BALB/c mice. Values represent mean ± standard deviation (n = 3-4).

	SUV			
	1 h	4 h	24 h	72 h
Blood	2.0 ± 0.5	0.4 ± 0.1	0.0 ± 0.0	0.0 ± 0.0
Bone	1.7 ± 0.0	2.9 ± 1.0	2.5 ± 0.5	3.1 ± 1.3
Brain	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Heart	0.7 ± 0.2	0.4 ± 0.0	0.2 ± 0.0	0.1 ± 0.0
Kidneys	1.2 ± 0.1	0.9 ± 0.1	0.6 ± 0.0	0.4 ± 0.0
Liver	6.9 ± 0.5	11.2 ± 1.3	10.5 ± 0.8	7.7 ± 1.8
Lungs	1.0 ± 0.2	0.4 ± 0.0	0.2 ± 0.0	0.2 ± 0.0
Muscle	1.4 ± 0.8	0.5 ± 0.4	0.1 ± 0.0	0.1 ± 0.0
Pancreas	0.2 ± 0.1	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Spleen	1.7 ± 0.4	4.4 ± 3.1	4.4 ± 0.6	3.1 ± 1.1

* SUV = Standardized uptake value. Calculated as (radioactivity in cpm in organ/weight of organ in grams) / total cpm recovered/body weight).



Supplementary Figure S4. Ex vivo biodistribution over time expressed as percentage of injected activity (%IA) of [¹⁵³Sm]Sm-DOTA-TATE in CA20948 xenograft mice. Values represent mean ± standard deviation (n = 3-4).

Supplementary Table S5: Biodistribution data expressed as percentage of injected activity (%IA)* of [¹⁵³Sm]Sm-DOTA-TATE in CA20498 tumor bearing male NMRI-nude mice. Values represent mean ± standard deviation (*n* = 3-4).

	%ID			
	1 h	4 h	24 h	72 h
Blood	0.7 ± 0.2	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Bone	0.4 ± 0.0	0.5 ± 0.1	0.2 ± 0.1	0.2 ± 0.0
Brain	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Excreted	80.0 ± 4.4	83.0 ± 3.5	94.1 ± 3.6	96.6 ± 1.7
Heart	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Intestines	2.0 ± 0.3	4.4 ± 1.5	0.6 ± 0.2	0.1 ± 0.0
Kidneys	2.8 ± 0.2	2.4 ± 0.6	0.5 ± 0.2	0.1 ± 0.0
Liver	0.4 ± 0.1	0.2 ± 0.0	0.1 ± 0.0	0.2 ± 0.0
Lungs	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Muscle	1.0 ± 0.4	0.4 ± 0.2	0.1 ± 0.0	0.0 ± 0.0
Pancreas	1.0 ± 0.1	0.4 ± 0.3	0.1 ± 0.0	0.0 ± 0.0
Spleen	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Stomach	0.7 ± 0.1	1.0 ± 0.3	0.3 ± 0.2	0.1 ± 0.0
Tumor	3.7 ± 2.0	6.1 ± 3.7	3.2 ± 2.9	2.2 ± 1.6

* Percentage of injected activity calculated as (cpm in organ/total cpm) × 100

Supplementary Table S6: Biodistribution data expressed as standard uptake value (SUV)* of [¹⁵³Sm]Sm-DOTA-TATE in CA20498 tumor bearing male NMRI-nude mice. Values represent mean ± standard deviation (*n* = 3-4).

	SUV			
	1 h	4 h	24 h	72 h
Blood	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Bone	0.1 ± 0.0	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Brain	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Heart	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Kidneys	1.8 ± 0.1	1.7 ± 0.3	0.3 ± 0.1	0.1 ± 0.0
Liver	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Lungs	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Muscle	0.2 ± 0.1	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Pancreas	1.2 ± 0.2	0.6 ± 0.4	0.1 ± 0.0	0.0 ± 0.0
Spleen	0.1 ± 0.0	0.1 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Tumor	4.5 ± 2.0	4.4 ± 1.1	1.9 ± 1.2	1.7 ± 1.0

* SUV = Standardized uptake value. Calculated as (radioactivity in cpm in organ/weight of organ in grams) / total cpm recovered/body weight).