

Supplementary Information (SI)

Article title: Modelling DTPA therapy following Am contamination in rats

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Table A1 Kinetics of Am-citrate in blood of rats. Data from Turner and Taylor (1968) and from CEA/LRT studies. Data are expressed as the percentage of the administered activity (% IA; mean \pm SD).

Exp.	n ^a	Time after administration of Am-citrate (d)							
		6.94E-04	0.01	0.021	0.042	0.21	1	7	17
Turner and Taylor (1968)		14.9 \pm 0.5		5.0 \pm 0.5	2.2 \pm 0.3				
CEA/LRT	4		10.3 \pm 0.5			0.35 \pm 0.05	0.13 \pm 0.03	0.03 \pm 0.03	0.013 \pm 0.05

^a n = number of rats per group; this information is not available for the study of Turner and Taylor.

Table A2 Urinary excretion of Am-citrate in control rats. Data are expressed as 24 hours cumulated percentage of injected activity (% IA; mean \pm SD).

	n ^a	Time after administration of Am-citrate (d)									
		1	2	3	4	5	6	7	8	9	10
	4	10 \pm 2	1.2 \pm 0.3	0.55 \pm 0.07	0.37 \pm 0.04	0.27 \pm 0.05	0.23 \pm 0.05	0.25 \pm 0.22	0.21 \pm 0.10	0.16 \pm 0.08	0.11 \pm 0.04

^a n = number of rats per group

Table A3 Faecal excretion of Am-citrate in control rats. Data are expressed as 24 hours cumulated percentage of injected activity (% IA; mean \pm SD).

	n ^a	Time after administration of Am-citrate (d)									
		1	2	3	4	5	6	7	8	9	10
	4	1.3 \pm 0.2	1.8 \pm 0.8	2.3 \pm 0.9	2.9 \pm 0.9	2.9 \pm 0.8	3.2 \pm 0.3	2.7 \pm 0.9	2.6 \pm 0.5	2.5 \pm 0.7	1.8 \pm 0.4

^a n = number of rats per group

Table A4: Pu-DTPA in blood after injection of 12.2 kBq Pu-DTPA. Data are expressed as the percentage of the administered activity (% IA). The uncertainty was calculated as 30 % of the measured value.

Exp.	n ^a	Time after administration of Pu-DTPA (min.)						
		10	20	40	60	120	240	1440
CEA/LRT	1	7.14 \pm 2.14	4.03 \pm 1.21	2.77 \pm 0.83	0.91 \pm 0.27	0.14 \pm 0.04	0.03 \pm 0.01	0.02 \pm 0.005

^a n = number of rats per time point

Table A5: Pu-DTPA in urine after injection of 12.2 kBq Pu-DTPA. Data are expressed as the percentage of the administered activity (% IA). The uncertainties correspond to the measurement error, or to 3 % of the measured value (whichever the highest).

Exp	n ^a	Time after administration of Pu-DTPA (min.)						
		10	20	40	60	120	240	1440
Pu-DTPA from CEA/LRT	1	19.6 ± 0.6	20.7 ± 0.6	68 ± 4	88 ± 6	92 ± 8	91 ± 7	93 ± 16

^a n = number of rats per time point

Table A6: Measurements of hepatic and skeletal Am in rats on Day 14 for different DTPA treatment times. Data are expressed as the mean percentage of the injected activity (% IA; mean ± SD).

Exp.	n ^a	dose (µmol /kg)	T	Liver	Skeleton
A	4	300	1d	1.05±0.31	28±2
B	4	300	3d	1.16±0.19	30±4
C	4	300	7d	1.25±0.25	35±3

^a n = number of rats per group

d = dose of DTPA treatment

T = time of DTPA administration

Table A7: Urinary excretion of Am in DTPA-treated rats. Data are expressed as 24 hours cumulated percentage of injected activity (% IA; mean \pm SD).

Exp.	n ^a	dose (μ mol /kg)	T (d)	Time after administration of Am-citrate (d)								
				2	3	4	5	6	7	8	9	10
A	4	300	1	12.0 \pm 1.2	3.7 \pm 0.4	2.2 \pm 0.2	1.41 \pm 0.05	1.05 \pm 0.09	0.78 \pm 0.14	0.76 \pm 0.08		
B	4	300	3			10.2 \pm 0.1	3.1 \pm 0.3	1.9 \pm 0.9				
C	4	300	7							8.2 \pm 1.2	2.4 \pm 0.3	1.6 \pm 0.2

^a n = number of rats per group
d = dose of DTPA treatment
T = time of DTPA administration

Table A8: Faecal excretion of Am in DTPA-treated rats. Data are expressed as 24 hours cumulated percentage of injected activity (% IA; mean \pm SD).

Exp.	n ^a	dose (μ mol /kg)	T (d)	Time after administration of Am-citrate (d)								
				2	3	4	5	6	7	8	9	10
A	4	300	1	9.4 \pm 1.1	9.7 \pm 3.0	3.9 \pm 1.6	1.8 \pm 0.2	1.11 \pm 0.13	0.70 \pm 0.12	0.51 \pm 0.10	0.34 \pm 0.09	0.21 \pm 0.01
B	4	300	3			3.8 \pm 1.3	11 \pm 3	4.7 \pm 1.1				
C	4	300	7							5.0 \pm 1.9	8.4 \pm 0.8	3.3 \pm 0.8

^a n = number of rats per group
d = dose of DTPA treatment
T = time of DTPA administration

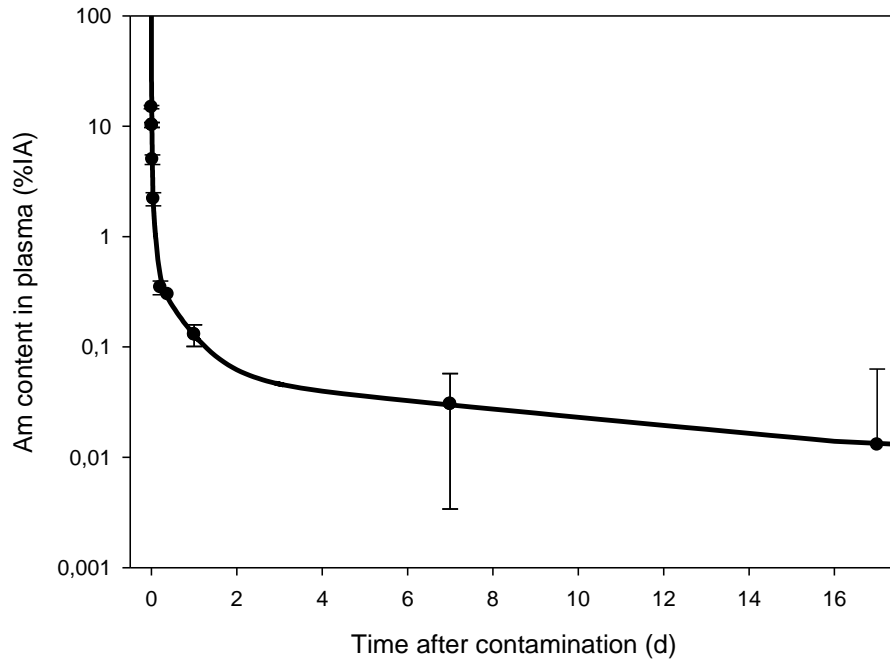


Figure S1 comparison of model prediction (lines) and data (circles) of plasma uptake and clearance of Am in control rats; Data from Turner and Taylor (1968) plus additional unpublished data from studies conducted at CEA/LRT are expressed as the percentage of the injected activity (% IA; mean \pm SD).