

Additional file 1

¹³¹I activity concentrations in examined tissues over time in young and adult male and female rats

Mean decay-corrected ¹³¹I activity concentrations, $c_{tissue}(t)$, expressed as percentage injected activity per gram tissue (%IA/g), measured in examined organs and tissues of male and female Sprague–Dawley rats exposed to ¹³¹I at 5 or 17 weeks of age. Measurements were obtained at six time points ranging from 1 h to 6 days post-injection. Data are presented as mean (SEM).

For the adult exposure groups, rats in the 1-hour group were not euthanised exactly 1 h after injection. “nd” indicates that no samples were collected at the corresponding time point.

Table S1: ^{131}I activity concentration, c_{tissue} , over time in male and female rats exposed at an age of 5 weeks. The activity concentration is decay corrected to time of injection and displayed for 6 measured time points ranging from 1 hour to 6 days for examined organs and tissues. The injected activity was on average 360 (SEM = 5) kBq.

Tissue	$c_{\text{tissue}}(t)$ [%IA/g]					
	1 hour	6 hours	18 hours	24 hours	3 days	6 days
Male, Youngs						
Blood	0.52 (0.02)	0.24 (0.01)	0.020 (0.001)	0.019 (0.002)	0.010 (0.001)	0.0042 (0.0006)
Bone marrow	0.26 (0.01)	0.14 (0.01)	0.0078 (0.0013)	0.0077 (0.0008)	0.0043 (0.0004)	0.00011 (0.00002)
Brain	0.020 (0.001)	0.0097 (0.0009)	0.0019 (0.0003)	0.0020 (0.0002)	0.0022 (0.0002)	0.00083 (0.00007)
Carcass	nd	0.22 (0.01)	nd	0.042 (0.005)	nd	0.020 (0.001)
Gonads	0.53 (0.04)	0.13 (0.01)	0.011 (0.001)	0.0076 (0.0006)	0.0084 (0.0017)	0.0015 (0.0002)
Heart	0.18 (0.01)	0.082 (0.006)	0.0086 (0.0003)	0.0078 (0.0007)	0.0050 (0.0004)	0.0011 (0.0000)
Kidney	0.39 (0.11)	0.15 (0.01)	0.033 (0.015)	0.016 (0.001)	0.012 (0.002)	0.0046 (0.0006)
Large intestine	0.30 (0.03)	0.16 (0.01)	0.014 (0.001)	0.013 (0.002)	0.0075 (0.0019)	0.0026 (0.0003)
Liver	0.22 (0.01)	0.12 (0.01)	0.014 (0.001)	0.017 (0.002)	0.013 (0.001)	0.0055 (0.0006)
Lungs	0.26 (0.01)	0.15 (0.01)	0.021 (0.007)	0.013 (0.001)	0.0073 (0.0005)	0.0038 (0.0004)
Muscle	0.13 (0.01)	0.069 (0.004)	0.0083 (0.0012)	0.0052 (0.0005)	0.0042 (0.0004)	0.0013 (0.0001)
Salivary gland	0.30 (0.01)	0.14 (0.01)	0.013 (0.001)	0.011 (0.001)	0.0067 (0.0007)	0.0030 (0.0006)
Small intestine	0.34 (0.01)	0.32 (0.03)	0.016 (0.001)	0.015 (0.001)	0.0065 (0.0014)	0.0022 (0.0003)
Spleen	0.24 (0.01)	0.12 (0.01)	0.013 (0.003)	0.0078 (0.0008)	0.0032 (0.0003)	0.0015 (0.0002)
Stomach	1.9 (0.3)	1.3 (0.3)	0.073 (0.004)	0.039 (0.004)	0.027 (0.018)	0.0038 (0.0006)
Thyroid	140 (25)	440 (20)	660 (54)	620 (18)	490 (20)	310 (40)
Female, Youngs						
Blood	0.64 (0.06)	0.30 (0.01)	0.030 (0.003)	0.025 (0.004)	0.0089 (0.0005)	0.0081 (0.0012)
Bone marrow	0.35 (0.04)	0.19 (0.02)	0.015 (0.003)	0.055 (0.016)	0.0045 (0.0003)	0.00045 (0.00013)
Brain	0.023 (0.002)	0.011 (0.001)	0.0068 (0.0016)	0.0059 (0.0022)	0.0029 (0.0005)	0.0019 (0.0003)
Carcass	nd	0.23 (0.01)	nd	0.058 (0.006)	nd	0.032 (0.001)
Gonads	0.46 (0.05)	0.20 (0.01)	0.020 (0.003)	0.05 (0.016)	0.010 (0.002)	0.016 (0.006)
Heart	0.23 (0.03)	0.096 (0.004)	0.013 (0.001)	0.010 (0.001)	0.0047 (0.0003)	0.0038 (0.0006)
Kidney	0.44 (0.03)	0.17 (0.01)	0.024 (0.003)	0.022 (0.004)	0.011 (0.001)	0.0096 (0.0014)
Large intestine	0.51 (0.06)	0.18 (0.01)	0.021 (0.007)	0.017 (0.002)	0.0062 (0.0003)	0.0052 (0.0005)
Liver	0.28 (0.03)	0.14 (0.01)	0.027 (0.004)	0.028 (0.004)	0.015 (0.001)	0.014 (0.003)
Lungs	0.3 (0.03)	0.17 (0.01)	0.019 (0.002)	0.017 (0.002)	0.0070 (0.0001)	0.0064 (0.0008)
Muscle	0.17 (0.02)	0.072 (0.003)	0.0076 (0.0011)	0.024 (0.011)	0.0037 (0.0011)	0.0022 (0.0003)
Salivary gland	0.36 (0.04)	0.17 (0.01)	0.015 (0.001)	0.015 (0.002)	0.0079 (0.0016)	0.0045 (0.0007)
Small intestine	0.46 (0.05)	0.29 (0.02)	0.027 (0.002)	0.021 (0.002)	0.011 (0.005)	0.0060 (0.0010)
Spleen	0.28 (0.04)	0.14 (0.01)	0.011 (0.001)	0.011 (0.002)	0.0037 (0.0006)	0.0027 (0.0003)
Stomach	2.8 (0.4)	1.4 (0.1)	0.055 (0.010)	0.052 (0.009)	0.011 (0.001)	0.0078 (0.0011)
Thyroid	220 (22)	660 (88)	730 (79)	940 (100)	890 (230)	550 (60)

Data is presented as mean (SEM) (n=5). nd indicates that no samples were collected at the correlating time points.

Table S2: ^{131}I activity concentration c_{tissue} in %IA/g over time in male and female rats exposed at an age of 17 weeks. The activity concentration is decay corrected to time of injection and displayed for 6 measured time points ranging from 1 hour to 6 days, and a selection of different organs and tissues. The injected activity was on average 360 (SEM = 5) kBq. It should be noted that all rats in the 1-hour-group were not euthanized exactly 1 h after injection.

Tissue	$c_{\text{tissue}}(t)$ [%IA/g]					
	1 hour	6 hours	18 hours	24 hours	3 days	6 days
Male, Adults						
Blood	0.19 (0.02)	0.12 (0.01)	0.015 (0.001)	0.013 (0.002)	0.0035 (0.0005)	0.0026 (0.0003)
Bone marrow	0.17 (0.05)	0.060 (0.004)	0.064 (0.036)	0.0073 (0.0008)	0.0055 (0.002)	0.0032 (0.0017)
Brain	0.010 (0.002)	0.0052 (0.0005)	0.0044 (0.0029)	0.0013 (0.0002)	0.0019 (0.0007)	0.00082 (0.00014)
Carcass	nd	0.073 (0.002)	nd	0.012 (0.001)	nd	0.0074 (0.0006)
Gonads	nd	0.060 (0.004)	nd	0.0065 (0.0007)	nd	0.00024 (0.00001)
Heart	0.058 (0.005)	0.037 (0.003)	0.0054 (0.0003)	0.0044 (0.0007)	0.0022 (0.0004)	0.0013 (0.0001)
Kidney	0.11 (0.01)	0.075 (0.010)	0.011 (0.001)	0.012 (0.002)	0.0055 (0.0003)	0.0041 (0.0004)
Large intestine	0.13 (0.05)	0.084 (0.011)	0.0088 (0.0014)	0.0081 (0.0011)	0.0045 (0.0016)	0.0025 (0.0003)
Liver	0.076 (0.008)	0.048 (0.004)	0.0098 (0.0007)	0.011 (0.002)	0.0080 (0.0006)	0.0054 (0.0005)
Lungs	0.41 (0.07)	0.069 (0.005)	0.0089 (0.0005)	0.0088 (0.0015)	0.0035 (0.0006)	0.0022 (0.0003)
Muscle	0.030 (0.001)	0.029 (0.005)	0.0034 (0.0005)	0.0026 (0.0004)	0.0012 (0.0003)	0.00067 (0.00008)
Salivary gland	0.077 (0.007)	0.060 (0.004)	0.0075 (0.0006)	0.0063 (0.0009)	0.0026 (0.00069)	0.0015 (0.0001)
Small intestine	0.11 (0.02)	0.077 (0.004)	0.0086 (0.0003)	0.0088 (0.0016)	0.0035 (0.0005)	0.0025 (0.0008)
Spleen	0.087 (0.014)	0.055 (0.004)	0.0062 (0.0004)	0.0061 (0.0009)	0.0016 (0.0001)	0.0013 (0.0003)
Stomach	0.76 (0.08)	0.47 (0.05)	0.041 (0.004)	0.031 (0.003)	0.0036 (0.0003)	0.0042 (0.0017)
Thyroid	79 (18)	310 (20)	320 (29)	310 (59)	150 (19)	110 (13)
Female, Adults						
Blood	0.63 (0.09)	0.35 (0.03)	0.056 (0.009)	0.031 (0.004)	0.018 (0.003)	0.0075 (0.0008)
Bone marrow	0.38 (0.05)	0.22 (0.02)	0.098 (0.052)	0.022 (0.005)	0.0073 (0.0007)	0.0018 (0.0009)
Brain	0.025 (0.003)	0.014 (0.001)	0.0062 (0.0017)	0.0022 (0.0005)	0.0069 (0.0012)	0.0016 (0.0002)
Carcass	nd	0.17 (0.01)	nd	0.025 (0.004)	nd	0.013 (0.001)
Gonads	nd	0.21 (0.01)	nd	0.021 (0.003)	nd	0.0067 (0.0017)
Heart	0.20 (0.02)	0.11 (0.01)	0.020 (0.003)	0.010 (0.002)	0.0082 (0.0013)	0.0029 (0.0003)
Kidney	0.36 (0.04)	0.21 (0.01)	0.036 (0.006)	0.026 (0.005)	0.021 (0.003)	0.0080 (0.0008)
Large intestine	0.32 (0.08)	0.23 (0.01)	0.033 (0.005)	0.018 (0.002)	0.011 (0.002)	0.0042 (0.0005)
Liver	0.31 (0.05)	0.16 (0.01)	0.034 (0.005)	0.030 (0.008)	0.033 (0.005)	0.012 (0.001)
Lungs	0.36 (0.05)	0.22 (0.01)	0.038 (0.005)	0.021 (0.003)	0.014 (0.003)	0.0053 (0.0005)
Muscle	0.11 (0.04)	0.074 (0.009)	0.037 (0.024)	0.037 (0.024)	0.028 (0.024)	0.0014 (0.0001)
Salivary gland	0.34 (0.14)	0.17 (0.01)	0.032 (0.01)	0.016 (0.002)	0.015 (0.004)	0.0033 (0.0003)
Small intestine	0.54 (0.22)	0.32 (0.04)	0.038 (0.006)	0.021 (0.002)	0.011 (0.001)	0.0040 (0.0004)
Spleen	0.26 (0.04)	0.17 (0.01)	0.029 (0.005)	0.014 (0.002)	0.0084 (0.0023)	0.0031 (0.0004)
Stomach	1.4 (0.2)	1.2 (0.2)	0.23 (0.04)	0.077 (0.023)	0.023 (0.005)	0.0054 (0.0005)
Thyroid	66 (13)	540 (66)	780 (96)	1100 (350)	770 (97)	470 (47)

Data is presented as the mean value (n=5-6) plus standard error of the mean (SEM). nd indicates that no samples were collected at the correlating time points.