

Supplementary:

Table S1: Here, for each mouse the dose is listed, with which every mouse was irradiated and the irradiation group. The irradiated doses were measured with radio-gafchromic films. From the irradiated doses of each group the mean and standard deviation were calculated and depicted.

Mouse ID	Group	Dose [Gy]	Mean dose [Gy]	Stdev dose [Gy]
18	Conv 23 Gy	23.4	23.4	0.8
22	Conv 23 Gy	23.9		
32	Conv 23 Gy	23.8		
36	Conv 23 Gy	22.1		
46	Conv 23 Gy	22.5		
50	Conv 23 Gy	24.7		
60	Conv 23 Gy	23.6		
8	Conv 33 Gy	32.5	32.3	1.2
26	Conv 33 Gy	33.1		
34	Conv 33 Gy	32.8		
40	Conv 33 Gy	31.7		
48	Conv 33 Gy	34.4		
54	Conv 33 Gy	30.9		
62	Conv 33 Gy	30.7		
31	Flash9 23 Gy	22.8	23.2	3.5
38	Flash9 23 Gy	25.2		
39	Flash9 23 Gy	26.0		
43	Flash9 23 Gy	21.4		
44	Flash9 23 Gy	28.1		
52	Flash9 23 Gy	18.3		
53	Flash9 23 Gy	23.1		
56	Flash9 23 Gy	26.5		
57	Flash9 23 Gy	17.1		
1	Flash9 33 Gy	36.2	32.9	2.5
10	Flash9 33 Gy	32.5		
58	Flash9 33 Gy	30.1		
5	Flash930 23 Gy	28.6	24.5	4.6
7	Flash930 23 Gy	19.0		
13	Flash930 23 Gy	24.7		
17	Flash930 23 Gy	16.2		
35	Flash930 23 Gy	28.3		
37	Flash930 23 Gy	28.8		
55	Flash930 23 Gy	25.9		
9	Flash930 33 Gy	35.6	32.7	2.7
19	Flash930 33 Gy	36.5		
21	Flash930 33 Gy	29.0		

23	Flash930 33 Gy	32.3		
41	Flash930 33 Gy	35.9		
47	Flash930 33 Gy	31.0		
49	Flash930 33 Gy	29.1		
61	Flash930 33 Gy	30.7		
63	Flash930 33 Gy	34.0		
15	sham	0.0	0.0	0.0
24	sham	0.0		
25	sham	0.0		
28	sham	0.0		
29	sham	0.0		
45	sham	0.0		
59	sham	0.0		

Table S2: This table includes all measurements of the inflammation score as well as erythema and desquamation score for each mouse. Additional, the measurements for ear swelling for each mouse and finally the raw measurements of the ear thickness are listed. The ear thickness was measured trice for each time point. The data are listed for every dose rate and sham group.

Inflammation score	Conventional dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 18	22	32	36	46	50	60			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0	0			0.00	0.00
4	0	0	0	0	0	0	0			0.00	0.00
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0.5	0	0	0	0	0	0			0.07	0.07
16	0	0	0	0	0	0	0.5			0.07	0.07
18	0	0	0	0	0	0	0.5			0.07	0.07
20	0	0	0	0	0	0	0			0.00	0.00
22	0.5	0	1	0.5	0	0	0			0.29	0.14
24	1	1	0	0	0	1	1			0.57	0.19
26	1	1	0	1	0	0	0			0.43	0.19
28	0	1	0	1	0	0	0			0.29	0.17
30	0	0	1	1	1	0	1			0.57	0.19
32	0	1	1	0	0	0	0			0.29	0.17
34	0	1	1	0	0	1	0			0.43	0.19
36	1	0	1	0	0	0	0			0.29	0.17
38	0	1	1	0	0	0	0			0.29	0.17
42	0	0	0	1	0	0	0			0.14	0.13
46	0	0	0	0	0	0	0			0.00	0.00
50	0	1	0	0	0	0	0			0.14	0.13

54	0	0	0	0	0	0	0			0.00	0.00
57	0	0	0	0	0	0	0			0.00	0.00
61	0	0	0	0	0	0	0			0.00	0.00
68	0	0	0	0	0	0	0			0.00	0.00
75	0	0	0	0	0	0	0			0.00	0.00
82	0	0	0	0	0	0	0			0.00	0.00
89	0	0	0	0	0	0	0			0.00	0.00
96	0	0	0	0	0	0	0			0.00	0.00
103	0	0	0	0	0	0	0			0.00	0.00
110	0	0	0	0	0	0	0			0.00	0.00
117	0	0	0	0	0	0	0			0.00	0.00
124	0	0	0	0	0	0	0			0.00	0.00
131	0	0	0	0	0	0	0			0.00	0.00
138	0	0	0	0	0	0	0			0.00	0.00
145	0	0	0	0	0	0	0			0.00	0.00
151	0	0	0	0	0	0	0			0.00	0.00
159	0	0	0	0	0	0	0			0.00	0.00
168	0	0	0	0	0	0	0			0.00	0.00
175	0	0	0	0	0	0	0			0.00	0.00
Inflammation score	Flash9 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 31	38	39	43	44	52	53	56	57	mean	SEM
0	0	0	0	0	0	0	0	0	0	0.00	0.00
2	0	0	0	0	0	0	0	0	0	0.00	0.00
4	0	0	0	0	0	0	0	0	0	0.00	0.00
6	0	0	0	0	0	0	0	0	0	0.00	0.00
8	0	0	0	0	0	0	0	0	0	0.00	0.00
10	0	0	0	0	0	0	0	0	0	0.00	0.00
12	0	0	0	0	0	0	0	0	0	0.00	0.00
14	0	0	0	0	0	0	0	0	0	0.00	0.00
16	0.5	0	0	0	0	0	0	0	0	0.06	0.05
18	0.5	0.5	0	0	0.5	0	0	0	0	0.17	0.08
20	0.5	0	0	0	0	0	0	0	0	0.06	0.05
22	1.5	0	1	1	0	0	0	0	0	0.39	0.19
24	0	0	0	0	0	1	1	1	1	0.44	0.17
26	1.5	1	0	0	0	0	1	0	0	0.39	0.19
28	0	0	0	0	1	0	0	0	0	0.11	0.10
30	1.5	0	0	0	1	0	0	0	0	0.28	0.18
32	1	0	0	0	1	0	0	0	0	0.22	0.14
34	0	0	0	0	1	0	0	0	0	0.11	0.10
36	0.5	0	0	0	0	0	0	0	0	0.06	0.05
38	0	0	0	1	1	0	0	0	1	0.33	0.16
42	0	0	0	0	1	0	0	0	0	0.11	0.10
46	0	0	0	0	0	0	1	0	0	0.11	0.10

50	0	0	0	0	0	0	0	0	0	0.00	0.00
54	0	0	0	0	0	0	0	1	0	0.11	0.10
57	0	0	0	0	0	0	0	0	0	0.00	0.00
61	0	0	0	0	0	0	0	0	0	0.00	0.00
68	0	0	0	0	0	0	0	0	0	0.00	0.00
75	0	0	0	0	0	0	0	0	0	0.00	0.00
82	0	0	0	0	0	0	0	0	0	0.00	0.00
89	0	0	0	0	0	0	0	0	0	0.00	0.00
96	0	0	0	0	0	0	0	0	0	0.00	0.00
103	0	0	0	0	0	0	0	0	0	0.00	0.00
110	0	0	0	0	0	0	0	0	0	0.00	0.00
117	0	0	0	0	0	0	0	0	0	0.00	0.00
124	0	0	0	0	0	0	0	0	0	0.00	0.00
131	0	0	0	0	0	0	0	0	0	0.00	0.00
138	0	0	0	0	0	0	0	0	0	0.00	0.00
145	0	0	0	0	0	0	0	0	0	0.00	0.00
151	0	0	0	0	0	0	0	0	0	0.00	0.00
159	0	0	0	0	0	0	0	0	0	0.00	0.00
168	0	0	0	0	0	0	0	0	0	0.00	0.00
175	0	0	0	0	0	0	0	0	0	0.00	0.00
Inflammation score	Flash930 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 5	7	13	17	35	37	55			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0.5	0	0	0	0	0	0			0.07	0.07
4	0	0	0	0	0	0	0			0.00	0.00
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0	0	0	0	0	0	0			0.00	0.00
16	0	0	0	0	0.5	0	0			0.07	0.07
18	0.5	0	0	0	0	0	0			0.07	0.07
20	0	0	1	0	1.5	0	0			0.36	0.22
22	0	0	1	0	1.5	0	0			0.36	0.22
24	0	0	1	1	0	0	1			0.43	0.19
26	0	1	0	0	0	0	0			0.14	0.13
28	0	0	1	1	0	1	0			0.43	0.19
30	0	0	1	0	0	1	0			0.29	0.17
32	0	0	1	0	1	0	0			0.29	0.17
34	0	0	1	0	0	0	0			0.14	0.13
36	0	0	1	0	0	0	0			0.14	0.13
38	0	0	0	0	0	1.5	0			0.21	0.20
42	0	0	0	0	1	0	0			0.14	0.13

46	0	0	0	0	0	0	0			0.00	0.00
50	0	0	0	0	0	0	0			0.00	0.00
54	0	0	0	0	0	0	0			0.00	0.00
57	0	0	0	0	0	0	0			0.00	0.00
61	0	0	0	0	0	0	0			0.00	0.00
68	0	0	0	0	0	0	0			0.00	0.00
75	0	0	0	0	0	0	0			0.00	0.00
82	0	0	0	0	0	0	0			0.00	0.00
89	0	0	0	0	0	0	0			0.00	0.00
96	0	0	0	0	0	0	0			0.00	0.00
103	0	0	0	0	0	0	0			0.00	0.00
110	0	0	0	0	0	0	0			0.00	0.00
117	0	0	0	0	0	0	0			0.00	0.00
124	0	0	0	0	0	0	0			0.00	0.00
131	0	0	0	0	0	0	0			0.00	0.00
138	0	0	0	0	0	0	0			0.00	0.00
145	0	0	0	0	0	0	0			0.00	0.00
151	0	0	0	0	0	0	0			0.00	0.00
159	0	0	0	0	0	0	0			0.00	0.00
168	0	0	0	0	0	0	0			0.00	0.00
175	0	0	0	0	0	0	0			0.00	0.00
Inflammation score	Conventional dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 8	26	34	40	48	54	62			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0.5	0			0.07	0.07
4	0.5	0	0	0	0	0	0			0.07	0.07
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0.5	0	0	0	0	0	0			0.07	0.07
14	0.5	0	0	0	0	0	0			0.07	0.07
16	1.5	0	2.5	1	0	0	1.5			0.9	0.3
18	1.5	0.5	2.5	1.5	0	0.5	0.5			1.0	0.3
20	2.5	0.5	5	2.5	2.5	0	1.5			2.1	0.6
22	5	1.5	3.5	2.5	1.5	0	2.5			2.4	0.6
24	5	1.5	1.5	2.5	1.5	0	1.5			1.9	0.5
26	3.5	0	1.5	2.5	1.5	0	0			1.3	0.5
28	2.5	1	1	1.5	1	0	1			1.14	0.26
30	1.5	1	1	0	1	1	1			0.93	0.16
32	1.5	1	1	0	1	0	1			0.79	0.20
34	1	0	0	1	0	0	1			0.43	0.19
36	1	0	0	0	0	0	1			0.29	0.17
38	1	0	0	0	0	1	0			0.29	0.17

38	0	0	0							0.00	0.00
42	0	0	0							0.00	0.00
46	0	0	0							0.00	0.00
50	1	0	0							0.33	0.27
54	1	0	0							0.33	0.27
57	0	0	0							0.00	0.00
61	0	0	0							0.00	0.00
68	0	0	0							0.00	0.00
75	0	0	0							0.00	0.00
82	0	0	0							0.00	0.00
89	0	0	0							0.00	0.00
96	0	0	0							0.00	0.00
103	0	0	0							0.00	0.00
110	0	0	0							0.00	0.00
117	0	0	0							0.00	0.00
124	0	0	0							0.00	0.00
131	0	0	0							0.00	0.00
138	0	0	0							0.00	0.00
145	0	0	0							0.00	0.00
151	0	0	0							0.00	0.00
159	0	0	0							0.00	0.00
168	0	0	0							0.00	0.00
175	0	0	0							0.00	0.00
Inflammation score	Flash930 dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 9	19	21	23	41	47	49	61	63	mean	SEM
0	0	0	0	0	0	0	0	0	0	0.00	0.00
2	0.5	0	0.5	0	0	0	0	0	0	0.11	0.07
4	0.5	0	0	0	0	0	0	0	0	0.06	0.05
6	0	0	0	0	0	0	0	0	0	0.00	0.00
8	0	0	0	0	0	0	0	0	0	0.00	0.00
10	0	0	0	0	0	0	0	0	0	0.00	0.00
12	0	0	0	0	0	0	0	0	0	0.00	0.00
14	0	0	0	0	0	0	0	0	0	0.00	0.00
16	0.5	0	0	0	0	0.5	0	0.5	0.5	0.22	0.08
18	0.5	0.5	0.5	0.5	0	0.5	0.5	0	0.5	0.39	0.07
20	1.5	1.5	0.5	0.5	0	0	1.5	1.5	1.5	0.94	0.21
22	1	2.5	0	1.5	1.5	0	0	1.5	2.5	1.2	0.3
24	0	2.5	0	1.5	3.5	0	1	1.5	1	1.2	0.4
26	0	2.5	1	1	1	0	0	0.5	1	0.78	0.25
28	0	1.5	0	0	0	0	0	0	0	0.17	0.16
30	1	1	1	0	0	0	0	0	1	0.44	0.17
32	0	1	1	0	0	0	0	0	0	0.22	0.14
34	0	0	0	0	0	0	0	0	1	0.11	0.10

36	0	0	0	0	0	0	0	0	0	0.00	0.00
38	0	0	1	0	0	0	0	1	0	0.22	0.14
42	0	0	0	0	0	0	0	0	0	0.00	0.00
46	0	0	0	0	1	0	0	0	0	0.11	0.10
50	0	0	0	0	0	0	0	0	0	0.00	0.00
54	0	0	0	0	1	0	0	0	0	0.11	0.10
57	0	0	0	0	0	0	0	0	0	0.00	0.00
61	0	1	0	0	0	0	0	0	0	0.11	0.10
68	1	0	0	0	0	0	0	0	0	0.11	0.10
75	0	0	0	0	0	0	0	0	0	0.00	0.00
82	0	0	0	0	0	0	0	0	0	0.00	0.00
89	0	0	0	0	0	0	0	0	0	0.00	0.00
96	0	0	0	0	0	0	0	0	0	0.00	0.00
103	0	0	0	0	0	0	0	0	0	0.00	0.00
110	0	0	0	0	0	0	0	0	0	0.00	0.00
117	0	0	0	0	0	0	0	0	0	0.00	0.00
124	0	0	0	0	0	0	0	0	0	0.00	0.00
131	0	0	0	0	0	0	0	0	0	0.00	0.00
138	0	0	0	0	0	0	0	0	0	0.00	0.00
145	0	0	0	0	0	0	0	0	0	0.00	0.00
151	0	0	0	0	0	0	0	0	0	0.00	0.00
159	0	0	0	0	0	0	0	0	0	0.00	0.00
168	0	0	0	0	0	0	0	0	0	0.00	0.00
175	0	0	0	0	0	0	0	0	0	0.00	0.00
Inflammation score	Sham irradiated 0 Gy										
time after irradiation [d]	Mouse ID: 15	24	25	28	29	45	59			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0.5	0	0	0	0	0			0.07	0.07
4	0	0	0.5	0	0	0	0			0.07	0.07
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0	0	0	0	0	0	0			0.00	0.00
16	0	0	0	0	0	0	0			0.00	0.00
18	0	0	0	0	0	0	0			0.00	0.00
20	0	0	0	0	0	0	0			0.00	0.00
22	0	0	0	0	0	0	0			0.00	0.00
24	0	0	0	0	0	0	0			0.00	0.00
26	0	0	0	0	0	0	0			0.00	0.00
28	0	0	0	0	0	0	0			0.00	0.00
30	0	0	0	0	0	1	0			0.14	0.13
32	0	0	0	0	0	0	0			0.00	0.00

34	0	0	0	0	0	0	0			0.00	0.00
36	0	0	0	0	0	0	0			0.00	0.00
38	0	0	0	0.5	0	0	0			0.07	0.07
42	0	0	0	0	0	0	0			0.00	0.00
46	0	0	0	0	0	0	0			0.00	0.00
50	0	0	0	0	0	0	0			0.00	0.00
54	0	0	0	0	0.5	0	0			0.07	0.07
57	0	0	0	0	2.5	0	0			0.36	0.33
61	0	0	0	0	0.5	0	0			0.07	0.07
68	0	0	0	0	0	0	0			0.00	0.00
75	0	0	0	0	0	0	0			0.00	0.00
82	0	0	0	0	0	0	0			0.00	0.00
89	0	0	0	0	0	0	0			0.00	0.00
96	0	0	0	0	0	0	0			0.00	0.00
103	0	0	0	0	0	0	0			0.00	0.00
110	0	0	0	0	0	0	0			0.00	0.00
117	0	0	0	0	0	0	0			0.00	0.00
124	0	0	0	0	0	0	0			0.00	0.00
131	0	0	0	0.5	0	0	0			0.07	0.07
138	0	0	0	0	0	0	0			0.00	0.00
145	0	0	0	0	0	0	0			0.00	0.00
151	0	0	0	0	0	0	0			0.00	0.00
159	0	0	0	0	0	0	0			0.00	0.00
168	0	0	0	0	0	0	0			0.00	0.00
175	0	0	0	0	0	0	0			0.00	0.00
Erythema score	Conventional dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 18	22	32	36	46	50	60			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0	0			0.00	0.00
4	0	0	0	0	0	0	0			0.00	0.00
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0.5	0	0	0	0	0	0			0.07	0.07
16	0	0	0	0	0	0	0.5			0.07	0.07
18	0	0	0	0	0	0	0.5			0.07	0.07
20	0	0	0	0	0	0	0			0.00	0.00
22	0.5	0	0	0.5	0	0	0			0.14	0.09
24	0	0	0	0	0	0	0			0.00	0.00
26	0	0	0	0	0	0	0			0.00	0.00
28	0	0	0	0	0	0	0			0.00	0.00
30	0	0	0	0	0	0	0			0.00	0.00

[illegible]

30	0.5	0	0	0	0	0	0	0	0	0.06	0.05
32	0	0	0	0	0	0	0	0	0	0.00	0.00
34	0	0	0	0	0	0	0	0	0	0.00	0.00
36	0.5	0	0	0	0	0	0	0	0	0.06	0.05
38	0	0	0	0	0	0	0	0	0	0.00	0.00
42	0	0	0	0	0	0	0	0	0	0.00	0.00
46	0	0	0	0	0	0	0	0	0	0.00	0.00
50	0	0	0	0	0	0	0	0	0	0.00	0.00
54	0	0	0	0	0	0	0	0	0	0.00	0.00
57	0	0	0	0	0	0	0	0	0	0.00	0.00
61	0	0	0	0	0	0	0	0	0	0.00	0.00
68	0	0	0	0	0	0	0	0	0	0.00	0.00
75	0	0	0	0	0	0	0	0	0	0.00	0.00
82	0	0	0	0	0	0	0	0	0	0.00	0.00
89	0	0	0	0	0	0	0	0	0	0.00	0.00
96	0	0	0	0	0	0	0	0	0	0.00	0.00
103	0	0	0	0	0	0	0	0	0	0.00	0.00
110	0	0	0	0	0	0	0	0	0	0.00	0.00
117	0	0	0	0	0	0	0	0	0	0.00	0.00
124	0	0	0	0	0	0	0	0	0	0.00	0.00
131	0	0	0	0	0	0	0	0	0	0.00	0.00
138	0	0	0	0	0	0	0	0	0	0.00	0.00
145	0	0	0	0	0	0	0	0	0	0.00	0.00
151	0	0	0	0	0	0	0	0	0	0.00	0.00
159	0	0	0	0	0	0	0	0	0	0.00	0.00
168	0	0	0	0	0	0	0	0	0	0.00	0.00
175	0	0	0	0	0	0	0	0	0	0.00	0.00
Erythema score	Flash930 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 5	7	13	17	35	37	55			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0.5	0	0	0	0	0	0			0.07	0.07
4	0	0	0.5	0	0	0	0			0.07	0.07
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0	0	0	0	0	0	0			0.00	0.00
16	0	0	0	0	0.5	0	0			0.07	0.07
18	0.5	0	0	0	0	0	0			0.07	0.07
20	0	0	0	0	0.5	0	0			0.07	0.07
22	0	0	0.5	0	0.5	0	0			0.14	0.09
24	0	0	0	0	0	0	0			0.00	0.00
26	0	0	0	0	0	0	0			0.00	0.00

28	0	0	0	0	0	0	0			0.00	0.00
30	0	0	0	0	0	0	0			0.00	0.00
32	0	0	0	0	0	0	0			0.00	0.00
34	0	0	0	0	0	0	0			0.00	0.00
36	0	0	0	0	0	0	0			0.00	0.00
38	0	0	0	0	0	0.5	0			0.07	0.07
42	0	0	0	0	0	0	0			0.00	0.00
46	0	0	0	0	0	0	0			0.00	0.00
50	0	0	0	0	0	0	0			0.00	0.00
54	0	0	0	0	0	0	0			0.00	0.00
57	0	0	0	0	0	0	0			0.00	0.00
61	0	0	0	0	0	0	0			0.00	0.00
68	0	0	0	0	0	0	0			0.00	0.00
75	0	0	0	0	0	0	0			0.00	0.00
82	0	0	0	0	0	0	0			0.00	0.00
89	0	0	0	0	0	0	0			0.00	0.00
96	0	0	0	0	0	0	0			0.00	0.00
103	0	0	0	0	0	0	0			0.00	0.00
110	0	0	0	0	0	0	0			0.00	0.00
117	0	0	0	0	0	0	0			0.00	0.00
124	0	0	0	0	0	0	0			0.00	0.00
131	0	0	0	0	0	0	0			0.00	0.00
138	0	0	0	0	0	0	0			0.00	0.00
145	0	0	0	0	0	0	0			0.00	0.00
151	0	0	0	0	0	0	0			0.00	0.00
159	0	0	0	0	0	0	0			0.00	0.00
168	0	0	0	0	0	0	0			0.00	0.00
175	0	0	0	0	0	0	0			0.00	0.00
Erythema score	Conventional dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 8	26	34	40	48	54	62			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0.5	0			0.07	0.07
4	0.5	0	0	0	0	0	0			0.07	0.07
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0.5	0	0	0	0	0	0			0.07	0.07
14	0.5	0	0	0	0	0	0			0.07	0.07
16	1.5	0	1.5	0	0	0	1.5			0.64	0.28
18	1.5	0.5	1.5	0.5	0	0.5	0.5			0.71	0.20
20	1.5	0.5	3	1.5	1.5	0	0.5			1.2	0.3
22	3	0.5	1.5	1.5	0.5	0	1.5			1.2	0.3
24	3	0.5	0.5	1.5	0.5	0	0.5			0.9	0.4

24	0	0	0							0.00	0.00
26	0	0	0							0.00	0.00
28	0	0	0							0.00	0.00
30	0	0	0							0.00	0.00
32	0	0	0							0.00	0.00
34	0	0	0							0.00	0.00
36	0	0	0							0.00	0.00
38	0	0	0							0.00	0.00
42	0	0	0							0.00	0.00
46	0	0	0							0.00	0.00
50	0	0	0							0.00	0.00
54	0	0	0							0.00	0.00
57	0	0	0							0.00	0.00
61	0	0	0							0.00	0.00
68	0	0	0							0.00	0.00
75	0	0	0							0.00	0.00
82	0	0	0							0.00	0.00
89	0	0	0							0.00	0.00
96	0	0	0							0.00	0.00
103	0	0	0							0.00	0.00
110	0	0	0							0.00	0.00
117	0	0	0							0.00	0.00
124	0	0	0							0.00	0.00
131	0	0	0							0.00	0.00
138	0	0	0							0.00	0.00
145	0	0	0							0.00	0.00
151	0	0	0							0.00	0.00
159	0	0	0							0.00	0.00
168	0	0	0							0.00	0.00
175	0	0	0							0.00	0.00
Erythema score	Flash930 dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 9	19	21	23	41	47	49	61	63	mean	SEM
0	0	0	0	0	0	0	0	0	0	0.00	0.00
2	0.5	0	0.5	0	0	0	0	0	0	0.11	0.07
4	0.5	0	0	0	0	0	0	0	0	0.06	0.05
6	0	0	0	0	0	0	0	0	0	0.00	0.00
8	0	0	0	0	0	0	0	0	0	0.00	0.00
10	0	0	0	0	0	0	0	0	0	0.00	0.00
12	0	0	0	0	0	0	0	0	0	0.00	0.00
14	0	0	0	0	0	0	0	0	0	0.00	0.00
16	0.5	0	0	0	0	0.5	0	0.5	0.5	0.22	0.08
18	0.5	0.5	0.5	0.5	0	0.5	0.5	0	0.5	0.39	0.07
20	0.5	0.5	0.5	0.5	0	0	0.5	0.5	0.5	0.39	0.07

22	0	1.5	0	0.5	0.5	0	0	0.5	1.5	0.50	0.19
24	0	1.5	0	0.5	1.5	0	0	0.5	0	0.44	0.20
26	0	1.5	0	0	0	0	0	0.5	0	0.22	0.16
28	0	0.5	0	0	0	0	0	0	0	0.06	0.05
30	0	0	0	0	0	0	0	0	0	0.00	0.00
32	0	0	0	0	0	0	0	0	0	0.00	0.00
34	0	0	0	0	0	0	0	0	0	0.00	0.00
36	0	0	0	0	0	0	0	0	0	0.00	0.00
38	0	0	0	0	0	0	0	0	0	0.00	0.00
42	0	0	0	0	0	0	0	0	0	0.00	0.00
46	0	0	0	0	0	0	0	0	0	0.00	0.00
50	0	0	0	0	0	0	0	0	0	0.00	0.00
54	0	0	0	0	0	0	0	0	0	0.00	0.00
57	0	0	0	0	0	0	0	0	0	0.00	0.00
61	0	0	0	0	0	0	0	0	0	0.00	0.00
68	0	0	0	0	0	0	0	0	0	0.00	0.00
75	0	0	0	0	0	0	0	0	0	0.00	0.00
82	0	0	0	0	0	0	0	0	0	0.00	0.00
89	0	0	0	0	0	0	0	0	0	0.00	0.00
96	0	0	0	0	0	0	0	0	0	0.00	0.00
103	0	0	0	0	0	0	0	0	0	0.00	0.00
110	0	0	0	0	0	0	0	0	0	0.00	0.00
117	0	0	0	0	0	0	0	0	0	0.00	0.00
124	0	0	0	0	0	0	0	0	0	0.00	0.00
131	0	0	0	0	0	0	0	0	0	0.00	0.00
138	0	0	0	0	0	0	0	0	0	0.00	0.00
145	0	0	0	0	0	0	0	0	0	0.00	0.00
151	0	0	0	0	0	0	0	0	0	0.00	0.00
159	0	0	0	0	0	0	0	0	0	0.00	0.00
168	0	0	0	0	0	0	0	0	0	0.00	0.00
175	0	0	0	0	0	0	0	0	0	0.00	0.00
Erythema score	Sham irradiated 0 Gy										
time after irradiation [d]	Mouse ID: 15	24	25	28	29	45	59			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0.5	0	0	0	0	0			0.07	0.07
4	0	0	0.5	0	0	0	0			0.07	0.07
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0	0	0	0	0	0	0			0.00	0.00
16	0	0	0	0	0	0	0			0.00	0.00
18	0	0	0	0	0	0	0			0.00	0.00

20	0	0	0	0	0	0	0			0.00	0.00
22	0	0	0	0	0	0	0			0.00	0.00
24	0	0	0	0	0	0	0			0.00	0.00
26	0	0	0	0	0	0	0			0.00	0.00
28	0	0	0	0	0	0	0			0.00	0.00
30	0	0	0	0	0	0	0			0.00	0.00
32	0	0	0	0	0	0	0			0.00	0.00
34	0	0	0	0	0	0	0			0.00	0.00
36	0	0	0	0	0	0	0			0.00	0.00
38	0	0	0	0.5	0	0	0			0.07	0.07
42	0	0	0	0	0	0	0			0.00	0.00
46	0	0	0	0	0	0	0			0.00	0.00
50	0	0	0	0	0	0	0			0.00	0.00
54	0	0	0	0	0.5	0	0			0.07	0.07
57	0	0	0	0	0.5	0	0			0.07	0.07
61	0	0	0	0	0.5	0	0			0.07	0.07
68	0	0	0	0	0	0	0			0.00	0.00
75	0	0	0	0	0	0	0			0.00	0.00
82	0	0	0	0	0	0	0			0.00	0.00
89	0	0	0	0	0	0	0			0.00	0.00
96	0	0	0	0	0	0	0			0.00	0.00
103	0	0	0	0	0	0	0			0.00	0.00
110	0	0	0	0	0	0	0			0.00	0.00
117	0	0	0	0	0	0	0			0.00	0.00
124	0	0	0	0	0	0	0			0.00	0.00
131	0	0	0	0.5	0	0	0			0.07	0.07
138	0	0	0	0	0	0	0			0.00	0.00
145	0	0	0	0	0	0	0			0.00	0.00
151	0	0	0	0	0	0	0			0.00	0.00
159	0	0	0	0	0	0	0			0.00	0.00
168	0	0	0	0	0	0	0			0.00	0.00
175	0	0	0	0	0	0	0			0.00	0.00
Desquamation score	Conventional dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 18	22	32	36	46	50	60			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0	0			0.00	0.00
4	0	0	0	0	0	0	0			0.00	0.00
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0	0	0	0	0	0	0			0.00	0.00
16	0	0	0	0	0	0	0			0.00	0.00

[illegible]

16	0	0	0	0	0	0	0	0	0	0.00	0.00
18	0	0	0	0	0	0	0	0	0	0.00	0.00
20	0	0	0	0	0	0	0	0	0	0.00	0.00
22	0	0	1	1	0	0	0	0	0	0.22	0.14
24	0	0	0	0	0	1	1	1	1	0.44	0.17
26	1	1	0	0	0	0	1	0	0	0.33	0.16
28	0	0	0	0	1	0	0	0	0	0.11	0.10
30	1	0	0	0	1	0	0	0	0	0.22	0.14
32	1	0	0	0	1	0	0	0	0	0.22	0.14
34	0	0	0	0	1	0	0	0	0	0.11	0.10
36	0	0	0	0	0	0	0	0	0	0.00	0.00
38	0	0	0	1	1	0	0	0	1	0.33	0.16
42	0	0	0	0	1	0	0	0	0	0.11	0.10
46	0	0	0	0	0	0	1	0	0	0.11	0.10
50	0	0	0	0	0	0	0	0	0	0.00	0.00
54	0	0	0	0	0	0	0	1	0	0.11	0.10
57	0	0	0	0	0	0	0	0	0	0.00	0.00
61	0	0	0	0	0	0	0	0	0	0.00	0.00
68	0	0	0	0	0	0	0	0	0	0.00	0.00
75	0	0	0	0	0	0	0	0	0	0.00	0.00
82	0	0	0	0	0	0	0	0	0	0.00	0.00
89	0	0	0	0	0	0	0	0	0	0.00	0.00
96	0	0	0	0	0	0	0	0	0	0.00	0.00
103	0	0	0	0	0	0	0	0	0	0.00	0.00
110	0	0	0	0	0	0	0	0	0	0.00	0.00
117	0	0	0	0	0	0	0	0	0	0.00	0.00
124	0	0	0	0	0	0	0	0	0	0.00	0.00
131	0	0	0	0	0	0	0	0	0	0.00	0.00
138	0	0	0	0	0	0	0	0	0	0.00	0.00
145	0	0	0	0	0	0	0	0	0	0.00	0.00
151	0	0	0	0	0	0	0	0	0	0.00	0.00
159	0	0	0	0	0	0	0	0	0	0.00	0.00
168	0	0	0	0	0	0	0	0	0	0.00	0.00
175	0	0	0	0	0	0	0	0	0	0.00	0.00
Desquamation score	Flash930 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 5	7	13	17	35	37	55			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0	0			0.00	0.00
4	0	0	0	0	0	0	0			0.00	0.00
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00

14	0	0	0	0	0	0	0			0.00	0.00
16	0	0	0	0	0	0	0			0.00	0.00
18	0	0	0	0	0	0	0			0.00	0.00
20	0	0	0	0	1	0	0			0.14	0.13
22	0	0	1	0	1	0	0			0.29	0.17
24	0	0	0	1	0	0	1			0.29	0.17
26	0	1	0	0	0	0	0			0.14	0.13
28	0	0	0	1	0	1	0			0.29	0.17
30	0	0	0	0	0	1	0			0.14	0.13
32	0	0	0	0	1	0	0			0.14	0.13
34	0	0	0	0	0	0	0			0.00	0.00
36	0	0	0	0	0	0	0			0.00	0.00
38	0	0	0	0	0	1	0			0.14	0.13
42	0	0	0	0	1	0	0			0.14	0.13
46	0	0	0	0	0	0	0			0.00	0.00
50	0	0	0	0	0	0	0			0.00	0.00
54	0	0	0	0	0	0	0			0.00	0.00
57	0	0	0	0	0	0	0			0.00	0.00
61	0	0	0	0	0	0	0			0.00	0.00
68	0	0	0	0	0	0	0			0.00	0.00
75	0	0	0	0	0	0	0			0.00	0.00
82	0	0	0	0	0	0	0			0.00	0.00
89	0	0	0	0	0	0	0			0.00	0.00
96	0	0	0	0	0	0	0			0.00	0.00
103	0	0	0	0	0	0	0			0.00	0.00
110	0	0	0	0	0	0	0			0.00	0.00
117	0	0	0	0	0	0	0			0.00	0.00
124	0	0	0	0	0	0	0			0.00	0.00
131	0	0	0	0	0	0	0			0.00	0.00
138	0	0	0	0	0	0	0			0.00	0.00
145	0	0	0	0	0	0	0			0.00	0.00
151	0	0	0	0	0	0	0			0.00	0.00
159	0	0	0	0	0	0	0			0.00	0.00
168	0	0	0	0	0	0	0			0.00	0.00
175	0	0	0	0	0	0	0			0.00	0.00
Desquamation score	Conventional dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 8	26	34	40	48	54	62			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0	0			0.00	0.00
4	0	0	0	0	0	0	0			0.00	0.00
6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00

[illegible]

8	0	0	0	0	0	0	0	0	0	0.00	0.00
10	0	0	0	0	0	0	0	0	0	0.00	0.00
12	0	0	0	0	0	0	0	0	0	0.00	0.00
14	0	0	0	0	0	0	0	0	0	0.00	0.00
16	0	0	0	0	0	0	0	0	0	0.00	0.00
18	0	0	0	0	0	0	0	0	0	0.00	0.00
20	1	1	0	0	0	0	1	1	1	0.56	0.17
22	1	1	0	1	1	0	0	1	1	0.67	0.16
24	0	1	0	1	2	0	1	1	1	0.78	0.21
26	0	1	1	1	1	0	0	0	1	0.56	0.17
28	0	1	0	0	0	0	0	0	0	0.11	0.10
30	1	1	1	0	0	0	0	0	1	0.44	0.17
32	0	1	1	0	0	0	0	0	0	0.22	0.14
34	0	0	0	0	0	0	0	0	1	0.11	0.10
36	0	0	0	0	0	0	0	0	0	0.00	0.00
38	0	0	1	0	0	0	0	1	0	0.22	0.14
42	0	0	0	0	0	0	0	0	0	0.00	0.00
46	0	0	0	0	1	0	0	0	0	0.11	0.10
50	0	0	0	0	0	0	0	0	0	0.00	0.00
54	0	0	0	0	1	0	0	0	0	0.11	0.10
57	0	0	0	0	0	0	0	0	0	0.00	0.00
61	0	1	0	0	0	0	0	0	0	0.11	0.10
68	1	0	0	0	0	0	0	0	0	0.11	0.10
75	0	0	0	0	0	0	0	0	0	0.00	0.00
82	0	0	0	0	0	0	0	0	0	0.00	0.00
89	0	0	0	0	0	0	0	0	0	0.00	0.00
96	0	0	0	0	0	0	0	0	0	0.00	0.00
103	0	0	0	0	0	0	0	0	0	0.00	0.00
110	0	0	0	0	0	0	0	0	0	0.00	0.00
117	0	0	0	0	0	0	0	0	0	0.00	0.00
124	0	0	0	0	0	0	0	0	0	0.00	0.00
131	0	0	0	0	0	0	0	0	0	0.00	0.00
138	0	0	0	0	0	0	0	0	0	0.00	0.00
145	0	0	0	0	0	0	0	0	0	0.00	0.00
151	0	0	0	0	0	0	0	0	0	0.00	0.00
159	0	0	0	0	0	0	0	0	0	0.00	0.00
168	0	0	0	0	0	0	0	0	0	0.00	0.00
175	0	0	0	0	0	0	0	0	0	0.00	0.00
Desquamation score	Sham irradiated 0 Gy										
time after irradiation [d]	Mouse ID: 15	24	25	28	29	45	59			mean	SEM
0	0	0	0	0	0	0	0			0.00	0.00
2	0	0	0	0	0	0	0			0.00	0.00
4	0	0	0	0	0	0	0			0.00	0.00

6	0	0	0	0	0	0	0			0.00	0.00
8	0	0	0	0	0	0	0			0.00	0.00
10	0	0	0	0	0	0	0			0.00	0.00
12	0	0	0	0	0	0	0			0.00	0.00
14	0	0	0	0	0	0	0			0.00	0.00
16	0	0	0	0	0	0	0			0.00	0.00
18	0	0	0	0	0	0	0			0.00	0.00
20	0	0	0	0	0	0	0			0.00	0.00
22	0	0	0	0	0	0	0			0.00	0.00
24	0	0	0	0	0	0	0			0.00	0.00
26	0	0	0	0	0	0	0			0.00	0.00
28	0	0	0	0	0	0	0			0.00	0.00
30	0	0	0	0	0	1	0			0.14	0.13
32	0	0	0	0	0	0	0			0.00	0.00
34	0	0	0	0	0	0	0			0.00	0.00
36	0	0	0	0	0	0	0			0.00	0.00
38	0	0	0	0	0	0	0			0.00	0.00
42	0	0	0	0	0	0	0			0.00	0.00
46	0	0	0	0	0	0	0			0.00	0.00
50	0	0	0	0	0	0	0			0.00	0.00
54	0	0	0	0	0	0	0			0.00	0.00
57	0	0	0	0	2	0	0			0.29	0.26
61	0	0	0	0	0	0	0			0.00	0.00
68	0	0	0	0	0	0	0			0.00	0.00
75	0	0	0	0	0	0	0			0.00	0.00
82	0	0	0	0	0	0	0			0.00	0.00
89	0	0	0	0	0	0	0			0.00	0.00
96	0	0	0	0	0	0	0			0.00	0.00
103	0	0	0	0	0	0	0			0.00	0.00
110	0	0	0	0	0	0	0			0.00	0.00
117	0	0	0	0	0	0	0			0.00	0.00
124	0	0	0	0	0	0	0			0.00	0.00
131	0	0	0	0	0	0	0			0.00	0.00
138	0	0	0	0	0	0	0			0.00	0.00
145	0	0	0	0	0	0	0			0.00	0.00
151	0	0	0	0	0	0	0			0.00	0.00
159	0	0	0	0	0	0	0			0.00	0.00
168	0	0	0	0	0	0	0			0.00	0.00
175	0	0	0	0	0	0	0			0.00	0.00
Ear swelling	Conventional dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 18	22	32	36	46	50	60			mean	SEM
0	20	-1	9	-21	-13	-3	17			1	5
2	7	0	10	-3	-7	-10	7			0	3
4	-13	-13	-5	-8	-15	-43	-3			-15	5

6	2	-11	14	2	5	2	7			3	3
8	-12	-20	3	8	-9	-20	-14			-9	4
10	18	-2	16	13	26	1	11			12	3
12	33	3	6	-4	-7	-27	-4			0	6
14	27	-16	1	11	7	-16	-4			1	5
16	11	4	19	27	16	-3	14			13	3
18	39	25	15	22	24	7	14			21	4
20	36	111	36	23	43	9	13			39	12
22	60	100	43	71	38	20	11			49	11
24	26	66	30	68	30	25	30			39	7
26	19	52	59	56	19	32	1			34	8
28	11	36	44	58	13	18	11			27	7
30	13	28	36	58	16	11	9			24	6
32	-4	11	23	34	11	6	11			13	4
34	-7	3	-5	20	-7	-7	-7			-2	4
36	8	26	10	28	11	25	15			18	3
38	8	15	20	13	1	-7	-2			7	3
42	0	4	-1	20	-3	-8	2			2	3
46	2.1	2.1	3.8	17.1	0.5	2.1	10.5			5.5	2.1
50	-18	8	8	5	7	3	-3			1	3
54	-14.5	5.5	-1.2	0.5	0.5	-2.9	-2.9			-2.1	2.2
57	-5	3	-7	8	-14	-9	-4			-4	3
61	6.4	6.4	4.8	1.4	-6.9	-3.6	-0.2			1.2	1.8
68	-1.7	0.0	-3.3	-1.7	-	-6.7	-3.3			-3.8	1.2
				10.0							
75	-17.1	-0.5	-	1.2	-	-	-5.5			-8.3	2.4
			10.5		12.1	13.8					
82	-9.8	-9.8	-8.1	-1.4	-	-	-9.8			-10.0	1.7
					14.8	16.4					
89	-2.1	-12.1	-	-	-7.1	-5.5	-			-10.0	1.8
			13.8	17.1			12.1				
96	-9.5	-14.5	-6.2	-	0.5	-7.9	-			-9.0	1.8
				12.9			12.9				
103	11	2	-8	-6	-11	-16	-6			-5	3
110	-6	-11	-12	-2	-14	9	-12			-7	3
117	-3.8	-8.8	-5.5	-0.5	-3.8	-	-7.1			-6.7	1.9
					17.1						
124	-8.3	-3.3	5.0	0.0	-6.7	0.0	-			-3.3	1.9
						10.0					
131	-0.7	-4.0	-	-7.4	-4.0	1.0	-4.0			-4.3	1.4
			10.7								
138	0	-7	-7	6	13	-7	20			2	4
145	5	-7	-17	-9	8	15	-7			-2	4
151	-2.6	-1.0	-2.6	-2.6	-	2.4	-			-5.0	2.4
					11.0		17.6				
159	13	-5	-15	-8	-7	8	-5			-3	3
168	19	-1	-10	0	-10	2	-15			-2	4
175	-10	-33	-10	-3	-5	19	-23			-9	6

Ear swelling	Flash9 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 31	38	39	43	44	52	53	56	57	mean	SEM
0	-21	-15	-15	10	4	-3	9	-8	5	-4	4
2	-8	25	10	3	12	8	-13	5	22	7	4
4	7	7	-15	-20	-3	-7	-7	18	-8	-3	4
6	-2.9	8.8	2.1	7.1	7.1	5.5	-1.2	2.1	10.5	4.4	1.4
8	-8.6	-3.6	-	-6.9	-	-5.2	-1.9	-	6.4	-7.3	2.3
			15.2		15.2			15.2			
10	19	14	-4	6	-6	16	6	9	14	8	3
12	12.6	-0.7	-4.0	2.6	-5.7	-4.0	7.6	4.3	-0.7	1.3	1.9
14	26	7	4	4	6	-8	-6	-6	9	4	3
16	19	-3	7	4	-4	-4	11	-1	24	6	3
18	34	15	29	9	32	-1	19	14	4	17	4
20	14	3	23	4	26	-16	51	11	1	13	6
22	48	1	38	18	33	16	8	33	13	23	5
24	135	5	38	6	46	28	48	60	-7	40	13
26	46	34	24	7	19	-4	19	69	9	25	7
28	78	14	3	4	28	14	13	41	1	22	8
30	58	-2	16	3	16	-12	31	4	13	14	6
32	36	-7	-7	-4	6	-19	11	6	1	2	5
34	25	-12	-2	-15	8	-7	21	1	6	3	4
36	48	0	1	8	-2	1	8	-4	18	9	5
38	8	-5	-7	-19	-4	-14	3	-9	3	-5	3
42	-1	-3	-20	-8	0	4	19	4	27	2	4
46	5	2	-16	-10	-11	-11	27	-11	7	-2	4
50	-3	-18	-17	2	-8	-12	12	-13	7	-6	3
54	-10	-10	-20	0	-1	-13	24	-3	7	-3	4
57	-7	-7	-19	-12	-19	-12	13	-14	-4	-9	3
61	3.1	-10.2	-	-6.9	-1.9	-5.2	-1.9	-	-1.9	-5.4	1.6
			11.9					11.9			
68	-1.7	3.3	-8.3	1.7	-1.7	-	8.3	-	8.3	-1.5	2.4
					11.7			11.7			
75	-10	-7	-15	-12	-22	5	-2	-5	8	-7	3
82	0	-15	-16	7	-13	-11	12	-11	4	-5	3
89	-15	-20	-24	-10	-5	-14	-5	-15	-5	-13	2
96	-3	-3	-15	-6	-11	-18	-3	-20	-1	-9	2
103	17	-11	-18	-6	-19	-9	1	-8	4	-5	4
110	-5.7	-10.7	-	-9.0	-	-2.4	2.6	-	-4.0	-8.1	2.1
			10.7		20.7			12.4			
117	3	6	-4	6	-9	5	18	5	25	6	3
124	-8	5	-25	-8	-5	-3	-5	-17	23	-5	4
131	-26	-4	-19	-9	-7	-22	6	-17	-1	-11	3
138	1	21	-17	0	-5	-2	13	-14	20	2	4
145	1	6	-12	-7	-4	3	28	0	10	3	4
151	11	-8	-3	6	-14	-6	-9	4	4	-2	3

159	-2	-8	-13	-10	-15	-8	27	-10	10	-3	4
168	0.5	-2.9	- 14.5	-9.5	- 11.2	- 14.5	-2.9	2.1	-1.2	-6.0	2.0
175	-6.4	6.9	-8.1	0.2	-3.1	-8.1	11.9	-8.1	6.9	-0.9	2.4
Ear swelling	Flash930 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 5	7	13	17	35	37	55			mean	SEM
0	0	7	29	24	4	-1	0			9	4
2	27	17	-2	-35	-2	12	7			3	7
4	7	-7	-8	8	2	8	-37			-4	6
6	25	-11	-11	15	-16	-1	-1			0	5
8	35	-4	16	-34	-27	21	-15			-1	9
10	11	-9	-4	-19	-7	14	1			-2	4
12	28	11	21	-37	-12	9	-14			1	8
14	4	9	24	-34	7	7	-14			0	7
16	31	27	16	-41	-19	-3	-18			-1	9
18	35	14	39	-10	-13	9	-5			10	7
20	33	31	71	-11	9	13	-2			20	10
22	33	16	115	-32	61	23	-4			30	17
24	51	23	105	-19	10	3	31			29	14
26	64	21	81	-18	39	2	2			27	12
28	31	6	64	-37	14	8	-12			10	11
30	41	8	56	-32	14	3	-17			10	11
32	16	-4	48	-31	-17	-4	-14			-1	9
34	15	-10	41	-35	3	-25	-9			-3	9
36	11	-7	36	-40	-4	-5	-2			-1	8
38	3	-9	31	-39	-19	-4	-12			-7	7
42	7	0	32	-40	2	2	-10			-1	7
46	2	-13	24	-38	-21	-1	-16			-9	7
50	-7	-12	17	-30	-17	-3	-10			-9	5
54	-11	-25	5	-48	-3	-6	-10			-14	6
57	-10	-15	0	-35	-5	-9	-27			-15	4
61	-4	-19	8	-35	1	-7	-30			-12	6
68	-5	-7	-3	-42	-2	-13	-2			-10	5
75	-2	-25	10	-44	3	-9	-24			-13	7
82	0	-18	19	-51	-8	-18	-20			-14	8
89	-5	-27	6	-32	-12	-30	-14			-16	5
96	-13	-10	-5	-38	-16	-18	-11			-16	4
103	-26	-18	-13	-53	-19	-14	-16			-23	5
110	-7	-14	-9	-41	-14	-16	-17			-17	4
117	-15	-4	5	-30	3	3	3			-5	5
124	-2	-13	-3	-23	0	-10	-37			-13	5
131	-12	-26	-16	-31	-19	-7	-1			-16	4
138	-7	-10	-4	-12	-12	-15	1			-9	2
145	-9	-2	-4	-45	-9	36	-9			-6	8

151	-4	-14	4	-51	-14	-9	-28			-17	6
159	-13	-18	-10	-33	-12	-8	-12			-15	3
168	-3	-8	-10	-43	0	-1	-26			-13	6
175	2	-15	-13	-40	-11	4	-6			-11	5
Ear swelling	Conventional dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 8	26	34	40	48	54	62			mean	SEM
0	2	4	-6	-6	-15	-25	-26			-10	4
2	20	-3	-7	-23	-5	5	20			1	5
4	8	13	-13	12	-32	-32	32			-2	9
6	-8	25	-5	-11	25	5	10			6	5
8	11	-5	-10	-15	-10	-12	-4			-6	3
10	14	26	6	-2	41	6	13			15	5
12	41	6	-14	-9	-9	-4	6			2	7
14	62	12	2	-11	-6	6	17			12	9
16	64	14	6	22	21	7	69			29	9
18	100	20	42	60	37	17	135			59	15
20	208	36	138	114	76	11	136			103	23
22	226	83	308	188	80	20	145			150	35
24	331	85	81	245	150	20	176			155	37
26	417	79	62	184	149	9	124			146	46
28	298	71	41	91	106	-2	83			98	33
30	223	51	21	81	76	3	58			73	25
32	163	49	3	41	48	-4	46			49	19
34	121	35	6	41	30	-9	35			37	14
36	93	48	21	23	31	5	43			38	10
38	86	20	21	28	8	-4	38			28	10
42	75	15	9	12	24	-10	49			25	10
46	64	17	-11	7	7	-5	25			15	9
50	52	7	-2	3	3	2	25			13	7
54	60	-5	5	-6	5	0	19			11	8
57	56	5	-2	0	-4	-15	23			9	8
61	73	13	11	5	0	-5	20			17	9
68	67	-2	2	42	0	-13	25			17	10
75	31	-12	-5	0	-7	-2	8			2	5
82	37	9	-15	-11	-11	-15	14			1	7
89	21	5	-7	-7	-7	-14	1			-1	4
96	20	12	-3	-8	-21	-6	-3			-1	5
103	16	11	4	-19	-18	-8	-1			-2	5
110	-1	18	-4	-16	-7	-1	24			2	5
117	30	10	20	-7	-2	-15	31			9	6
124	5	2	20	-13	-3	-25	2			-2	5
131	-2	-1	-9	-19	-19	-7	8			-7	3
138	10	11	23	-14	-30	-10	31			3	8
145	13	-7	38	-14	-7	6	13			6	6

151	19	9	16	-34	-18	-21	24			-1	8
159	-7	-5	15	-20	-27	-5	10			-5	5
168	-5	4	92	-23	-13	-16	-1			5	14
175	19	-8	39	-15	-5	2	7			5	6
Ear swelling	Flash9 dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 1	10	58							mean	SEM
0	5	0	-25							-6	8
2	-2	45	-10							11	14
4	-2	-7	-25							-11	6
6	10	-16	14							3	8
8	11	3	-12							1	6
10	-7	-9	6							-3	4
12	-2	13	-7							1	5
14	-8	2	1							-2	3
16	1	22	12							12	5
18	22	29	10							20	4
20	53	53	23							43	8
22	106	60	31							66	18
24	45	55	46							48	3
26	14	32	17							21	5
28	8	31	14							18	6
30	16	33	6							18	6
32	9	8	-11							2	5
34	8	16	-5							6	5
36	8.1	8.1	13.1							9.8	1.4
38	5	23	0							9	6
42	4	35	5							15	8
46	7	15	2							8	3
50	-3.3	1.7	-3.3							-1.7	1.4
54	-11	9	-3							-2	5
57	5	-14	-10							-6	5
61	18	11	1							10	4
68	0.0	-6.7	1.7							-1.7	2.1
75	-8.8	-7.1	-2.1							-6.0	1.6
82	0	-16	-10							-9	4
89	6.2	-2.1	2.9							2.3	2.0
96	0.5	-2.9	-9.5							-4.0	2.4
103	-11.0	-7.6	- 12.6							-10.4	1.2
110	-10.7	-9.0	-4.0							-7.9	1.6
117	-15	8	-5							-4	6
124	-11.7	-1.7	-6.7							-6.7	2.4
131	-22	-1	-21							-15	6
138	20	10	-4							8	6

145	1.2	7.9	-0.5							2.9	2.1
151	-11	21	-13							-1	9
159	-7	-27	-8							-14	5
168	-9.5	-14.5	-12.9							-12.3	1.2
175	-3	-15	-3							-7	3
Ear swelling	Flash930 dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 9	19	21	23	41	47	49	61	63	mean	SEM
0	-6	14	5	14	22	19	-1	-6	-6	6	4
2	65	55	18	-12	30	13	-3	3	0	19	8
4	5	13	22	0	0	-23	-20	-3	-5	-1	4
6	-6	-15	15	25	44	-1	4	-13	19	8	6
8	8	3	0	6	6	-27	-10	18	-14	-1	4
10	23	14	31	8	9	18	-4	-1	-14	9	4
12	39	-4	41	16	8	-14	-16	-12	6	7	7
14	34	11	44	16	12	1	2	-14	-1	12	6
16	34	11	47	11	21	44	12	11	11	22	5
18	60	42	77	85	74	20	10	27	20	46	9
20	134	81	81	94	49	34	31	14	61	64	12
22	96	201	116	115	136	55	13	18	90	93	19
24	100	255	111	131	108	35	16	3	60	91	24
26	81	217	82	101	77	24	29	6	61	75	19
28	58	159	74	96	53	13	-2	-2	46	55	16
30	48	151	48	69	24	13	-6	1	49	44	15
32	28	96	23	28	6	-4	-9	-11	38	22	10
34	30	68	26	13	21	-2	-14	-22	28	16	8
36	28	66	20	25	25	6	1	21	28	25	6
38	25	55	13	21	10	-5	-15	-10	20	13	7
42	19	42	22	-5	7	7	9	-10	20	12	5
46	2	34	20	10	-1	-6	-16	-11	22	6	5
50	20	-2	7	15	38	2	-8	-13	30	10	5
54	-8	19	-6	7	12	-3	-8	-8	9	2	3
57	5	18	3	6	-4	-17	-4	-17	31	3	5
61	18	13	11	6	1	-4	3	-12	28	7	4
68	13	-2	8	-2	7	-2	5	-20	13	2	3
75	5	0	6	-7	-10	-2	-5	-29	5	-4	3
82	-10	12	5	0	-10	-15	-1	-16	7	-3	3
89	-3.8	-17.1	-2.1	-10.5	-20.5	-15.5	-8.8	-8.8	-0.5	-9.7	2.2
96	12	-8	-21	0	-23	-5	-8	-28	-6	-10	4
103	-4	-9	-13	-3	21	-16	-16	2	-16	-6	4
110	-11	-6	-6	-6	-7	-9	-12	3	16	-4	3
117	5	5	0	-15	5	-5	-7	-12	31	0	4
124	17	7	-20	-35	-7	-3	2	-22	-8	-8	5

131	-7.4	-7.4	- 24.0	- 24.0	- 14.0	-9.0	- 17.4	- 20.7	-9.0	-14.8	2.2
138	26	40	-22	-12	3	10	-14	-4	-4	2	6
145	13	31	-10	-7	13	0	-10	3	-5	3	4
151	21	52	-4	-14	6	-14	-18	-14	-21	-1	8
159	-5	50	-3	-3	-10	5	-10	-18	5	1	6
168	0	27	-11	-10	-16	-1	-6	-20	0	-4	4
175	9	12	-3	-16	-1	0	-8	-21	29	0	5
Ear swelling		Sham irradiated 0 Gy									
time after irradiation [d]	Mouse ID: 15	24	25	28	29	45	59			mean	SEM
0	-13	0	12	-8	9	-15	15			0	4
2	7	30	-13	2	-12	7	-20			0	6
4	13	-8	7	-7	-2	3	-7			0	3
6	-11	-6	-15	14	19	4	-5			0	4
8	-4	23	8	1	-15	-15	1			0	5
10	-1	-6	-17	19	11	3	-9			0	4
12	13	3	-11	6	-4	6	-12			0	3
14	7	7	-14	11	-3	-8	-1			0	3
16	22	-9	-19	1	2	6	-3			0	5
18	10	14	-21	20	-16	4	-11			0	6
20	9	4	-17	-2	21	3	-17			0	5
22	-2	11	-7	28	-19	-9	-4			0	5
24	0	10	-9	8	6	-7	-7			0	3
26	-11	-4	-11	36	14	-16	-8			0	6
28	-2	1	-17	49	-1	-16	-14			0	8
30	1	16	-19	26	-11	-2	-11			0	6
32	-2	8	-17	26	-2	-6	-6			0	5
34	-2	11	-15	16	-9	-5	5			0	4
36	1	8	-22	33	-14	-15	8			0	7
38	10	6	-20	26	0	-15	-7			0	6
42	9	-6	-13	29	-8	-6	-3			0	5
46	0	-6	-1	15	-3	-11	5			0	3
50	2	-5	-8	30	-15	-5	2			0	5
54	-6	-8	-16	29	0	7	-6			0	5
57	-10	-9	-20	30	35	-17	-9			0	8
61	-7	0	-17	36	3	1	-17			0	6
68	2	-7	-8	13	7	-12	5			0	3
75	-4	-4	-20	21	21	-7	-7			0	5
82	-3	-10	-21	32	2	-13	14			0	6
89	0	-15	-14	46	5	-10	-10			0	8
96	-1	-8	-10	37	7	-10	-16			0	6
103	-11	-8	-28	39	22	-16	1			0	8
110	-12	-9	-19	39	21	-4	-16			0	8
117	-4	-4	-7	5	20	-17	8			0	4

124	-10	2	-7	23	5	-7	-7			0	4
131	-16	-17	-11	39	9	1	-6			0	7
138	-10	-10	-20	48	10	-5	-10			0	8
145	3	0	-20	36	3	-12	-9			0	6
151	-14	-8	-21	31	22	-6	-4			0	7
159	0	-7	-27	40	3	-13	3			0	7
168	4	2	-16	27	-16	-6	5			0	5
175	0	0	-15	19	-10	-8	14			0	4
ear thickness	Conventional dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 18	22	32	36	46	50	60			mean	SEM
0	270	250	270	245	230	260	290			247	4
0	270	225	240	210	240	230	245				
0	260	260	255	220	230	240	255				
2	250	245	250	215	215	220	240			239	3
2	245	225	250	230	235	225	250				
2	240	245	245	260	245	240	245				
4	225	230	240	235	225	200	245			227	3
4	230	225	235	235	225	200	235				
4	230	230	235	230	230	195	235				
6	245	230	255	250	245	245	250			244	2
6	245	230	250	240	240	240	250				
6	240	230	260	240	255	245	245				
8	240	225	250	245	240	230	240			236	3
8	230	225	250	270	240	220	230				
8	230	225	245	245	230	225	225				
10	255	235	245	260	265	250	245			249	2
10	260	235	260	250	265	240	245				
10	250	235	255	240	260	225	255				
12	295	255	250	245	235	225	240			244	4
12	270	240	250	245	235	225	240				
12	265	245	250	230	240	200	240				
14	280	230	245	250	255	230	245			247	3
14	260	230	245	265	255	230	240				
14	280	230	250	255	250	230	240				
16	260	250	260	275	265	250	265			259	2
16	255	255	270	275	260	245	255				
16	255	245	265	270	260	235	260				
18	280	280	255	270	265	250	255			264	2
18	280	260	255	260	265	250	255				
18	285	265	265	265	270	250	260				
20	290	375	300	280	290	260	255			288	7
20	285	355	290	270	295	260	270				
20	280	350	265	265	290	255	260				
22	310	345	310	305	290	270	270			301	6

22	305	355	295	330	285	270	265				
22	320	355	280	335	295	275	255				
24	280	320	290	330	280	275	280			291	4
24	280	325	280	315	285	275	280				
24	275	310	275	315	280	280	285				
26	270	310	325	310	270	280	250			287	5
26	270	305	310	310	270	285	250				
26	275	300	300	305	275	290	260				
28	260	300	300	310	270	260	260			278	4
28	260	280	295	310	260	265	260				
28	265	280	290	305	260	280	265				
30	260	285	310	305	265	260	260			272	4
30	255	270	285	305	265	260	260				
30	265	270	255	305	260	255	250				
32	250	265	270	300	260	265	265			265	3
32	245	260	270	280	270	255	265				
32	250	265	285	280	260	255	260				
34	240	250	250	270	240	245	245			247	2
34	240	255	240	270	240	240	240				
34	245	250	240	265	245	240	240				
36	255	265	255	275	255	275	260			260	2
36	250	265	250	270	250	260	255				
36	245	275	250	265	255	265	255				
38	260	260	255	265	240	240	240			252	2
38	250	260	260	255	250	240	240				
38	250	260	280	255	250	235	250				
42	250	250	255	270	240	240	245			247	2
42	240	250	240	260	240	240	245				
42	245	245	235	265	245	230	250				
46	250	245	250	265	245	245	255			252	1
46	250	250	255	265	245	250	255				
46	245	250	245	260	250	250	260				
50	230	260	255	250	255	250	255			246	2
50	225	250	260	250	250	250	235				
50	225	250	245	250	250	245	235				
54	230	260	255	255	255	250	245			249	1
54	240	255	250	250	250	250	250				
54	240	255	245	250	250	245	250				
57	255	250	245	260	240	245	245			246	2
57	240	255	245	260	235	240	245				
57	240	255	240	255	235	240	250				
61	260	255	250	250	240	245	250			250	1
61	255	255	255	250	245	245	245				
61	250	255	255	250	240	245	250				
68	245	245	245	240	230	240	240			238	1
68	240	240	235	230	230	235	240				

68	235	240	235	250	235	230	235				
75	240	250	240	250	240	240	245			242	1
75	230	250	240	250	240	235	245				
75	230	250	240	255	235	235	245				
82	245	240	240	250	240	245	240			240	1
82	240	240	240	250	235	220	240				
82	235	240	245	245	230	235	240				
89	265	255	230	240	245	255	235			244	2
89	255	230	240	240	255	250	245				
89	235	240	250	230	240	240	245				
96	250	240	245	240	255	245	240			244	1
96	240	240	245	240	255	250	240				
96	240	235	250	240	250	240	240				
103	255	250	235	240	230	235	240			238	2
103	255	245	235	235	235	225	235				
103	250	240	235	235	230	220	235				
110	230	225	225	225	220	245	220			227	2
110	225	225	220	235	220	240	225				
110	230	220	220	235	220	245	220				
117	245	235	240	250	240	225	235			237	1
117	245	235	240	240	245	225	235				
117	230	235	235	240	235	230	240				
124	240	245	255	260	240	250	240			245	1
124	240	245	255	240	240	250	240				
124	240	245	250	245	245	245	235				
131	250	245	240	250	250	250	245			243	1
131	250	245	235	240	240	250	245				
131	240	240	235	230	240	245	240				
138	235	230	230	240	250	220	245			236	2
138	235	225	230	240	245	230	260				
138	230	225	220	240	245	230	255				
145	235	225	215	220	240	250	220			230	2
145	230	225	215	225	240	245	220				
145	245	225	215	225	240	245	235				
151	230	235	230	230	220	235	215			228	1
151	230	230	230	230	225	235	215				
151	230	230	230	230	220	235	215				
159	250	235	225	225	235	250	235			234	2
159	250	230	220	230	230	245	230				
159	250	230	220	230	225	240	230				
168	265	250	240	250	230	250	235			246	2
168	265	245	240	250	240	250	235				
168	270	245	235	245	245	250	230				
175	240	205	240	240	240	270	220			234	3
175	230	215	230	240	240	260	220				
175	230	210	230	240	235	255	220				

ear thickness	Flash9 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 31	38	39	43	44	52	53	56	57	mean	SEM
0	230	220	235	250	250	280	260	235	240	243	3
0	225	265	240	265	245	225	255	240	235		
0	220	210	220	255	255	225	250	240	280		
2	230	260	250	230	240	270	235	250	250	245	3
2	230	270	235	245	240	245	220	250	250		
2	230	260	260	250	270	225	220	230	280		
4	270	250	230	220	245	240	235	270	235	239	2
4	240	250	225	225	235	235	235	255	235		
4	235	245	225	220	235	230	235	255	230		
6	230	250	255	255	250	250	255	250	240	246	2
6	240	250	240	245	250	245	230	240	270		
6	245	250	235	245	245	245	235	240	245		
8	235	250	230	240	230	230	240	230	265	238	2
8	235	240	230	235	230	235	245	230	245		
8	240	235	230	240	230	255	245	230	245		
10	245	255	230	240	235	250	255	245	255	246	2
10	270	250	225	245	225	245	230	245	250		
10	255	250	245	245	235	265	245	250	250		
12	255	245	240	250	240	250	250	240	240	245	1
12	260	240	240	245	240	240	250	260	240		
12	255	245	240	245	235	230	255	245	250		
14	260	250	250	250	250	245	240	240	250	250	2
14	285	255	250	250	250	240	240	240	255		
14	270	255	250	250	255	230	240	240	260		
16	265	245	255	250	225	255	255	240	270	252	2
16	265	245	255	255	255	230	255	250	270		
16	265	240	250	245	245	240	260	245	270		
18	275	260	260	255	265	240	260	250	245	260	3
18	275	250	285	250	290	240	260	250	245		
18	280	265	270	250	270	245	265	270	250		
20	260	255	275	255	290	230	305	265	250	262	4
20	260	250	275	250	270	235	280	260	250		
20	270	250	265	255	265	235	315	255	250		
22	280	255	270	270	290	280	255	275	260	275	3
22	310	255	295	280	290	270	265	285	265		
22	310	250	305	260	275	255	260	295	270		
24	380	260	290	260	300	290	300	270	265	292	8
24	405	260	275	260	305	285	310	340	235		
24	375	250	305	255	290	265	290	325	235		
26	310	310	280	260	270	240	275	365	260	277	5
26	290	300	280	265	265	260	270	300	260		
26	295	250	270	255	280	245	270	300	265		

28	340	275	260	260	280	265	265	290	250	272	5
28	330	265	250	255	280	270	265	290	250		
28	315	255	250	250	275	260	260	295	255		
30	320	245	270	250	270	250	300	250	265	261	4
30	300	235	255	245	265	230	265	250	260		
30	295	255	265	255	255	225	270	255	255		
32	295	245	240	240	255	240	260	260	255	255	3
32	290	245	245	255	260	230	265	250	255		
32	280	245	250	250	260	230	265	265	250		
34	275	240	250	240	255	245	280	255	255	251	3
34	275	240	250	235	255	240	270	250	260		
34	270	230	240	225	260	240	260	245	250		
36	300	245	240	255	230	240	245	235	260	251	3
36	285	240	245	250	245	240	255	240	260		
36	285	240	245	245	245	250	250	240	260		
38	250	240	235	225	240	230	240	230	245	241	2
38	250	240	240	220	240	230	250	240	250		
38	260	240	240	235	245	235	255	240	250		
42	245	245	225	235	245	250	265	250	260	247	3
42	245	240	225	230	245	245	270	250	280		
42	240	240	225	245	245	250	255	245	275		
46	245	250	230	230	240	235	280	230	250	244	3
46	260	250	230	245	230	235	265	240	250		
46	250	245	230	235	235	235	275	235	260		
50	240	220	230	250	235	235	255	225	255	239	2
50	240	220	230	250	245	235	255	230	255		
50	245	240	225	240	230	230	260	240	245		
54	245	245	235	250	250	235	275	250	255	249	2
54	240	240	230	250	255	240	275	250	260		
54	240	240	230	255	245	240	275	245	260		
57	240	240	235	235	235	240	270	235	240	241	2
57	240	245	230	240	230	240	260	235	255		
57	250	245	230	240	230	235	260	240	245		
61	255	245	235	245	240	240	250	235	250	243	1
61	250	240	235	255	250	245	245	235	245		
61	250	230	240	225	250	245	245	240	245		
68	240	240	230	245	245	230	255	235	255	240	2
68	240	255	235	250	240	230	255	230	255		
68	240	240	235	235	235	230	240	225	240		
75	240	245	235	240	230	270	250	245	260	244	2
75	240	245	235	240	230	240	255	240	260		
75	240	240	235	235	225	255	240	250	255		
82	255	225	235	250	230	235	265	240	255	245	2
82	250	235	240	250	240	240	265	240	255		
82	245	245	225	270	240	240	255	235	250		
89	240	235	230	250	245	240	250	235	240	241	1

89	240	235	230	235	245	245	250	240	255	244	2
89	235	230	230	245	255	235	245	240	250		
96	250	250	240	250	240	235	255	240	255		
96	250	250	240	250	230	235	245	225	250	237	2
96	250	250	235	240	255	235	250	235	250		
103	275	235	220	240	230	235	245	235	245		
103	255	230	225	235	220	235	235	235	245	226	1
103	250	230	230	235	220	230	250	235	250		
110	225	220	225	220	215	235	245	220	225		
110	230	225	220	230	210	235	235	220	225	250	2
110	230	225	225	225	215	225	230	225	240		
117	240	250	250	260	235	250	260	255	285		
117	245	250	240	245	235	250	260	245	260	244	3
117	255	250	230	245	235	245	265	245	260		
124	235	255	220	240	240	245	240	235	275		
124	240	255	220	240	245	245	245	230	275	236	2
124	245	250	230	240	245	245	245	230	265		
131	230	245	230	240	245	235	255	235	240		
131	220	240	230	240	235	220	255	230	250	236	3
131	215	245	225	235	240	220	250	225	250		
138	235	260	225	230	225	235	250	210	250		
138	235	255	215	235	230	230	245	225	250	235	2
138	235	250	210	235	230	230	245	225	260		
145	230	235	220	230	225	240	260	225	240		
145	235	235	220	235	230	235	260	235	240	231	2
145	235	245	220	210	230	230	260	235	245		
151	245	225	230	235	215	225	220	240	230		
151	240	225	230	240	220	225	225	230	240	233	3
151	245	225	230	240	220	230	225	240	240		
159	235	230	225	230	225	230	265	230	245		
159	235	230	225	225	220	230	270	225	245	242	2
159	235	225	220	225	220	225	255	225	250		
168	250	250	235	235	240	235	245	270	250		
168	250	245	235	240	240	235	245	240	245	242	2
168	245	240	230	240	230	230	245	240	245		
175	235	250	235	245	230	230	250	235	255		
175	235	250	235	245	240	235	255	235	250		
175	240	250	235	240	250	240	260	235	245		
ear thickness	Flash930 dose rate 23 Gy										
time after irradiation [d]	Mouse ID: 5	7	13	17	35	37	55			mean	SEM
0	250	265	290	280	250	250	250			255	4
0	245	250	275	290	245	265	235				
0	245	245	260	240	255	220	255				
2	275	255	240	200	235	240	235			242	4

2	265	255	235	195	235	240	235				
2	255	255	235	215	240	270	265				
4	260	240	230	220	250	255	205			238	4
4	250	235	235	280	240	245	200				
4	235	230	235	250	240	250	210				
6	275	235	235	280	225	240	240			241	4
6	265	230	230	275	230	240	235				
6	260	225	225	215	220	240	245				
8	280	245	245	200	215	270	230			244	6
8	275	240	300	195	215	290	225				
8	285	240	240	240	225	240	235				
10	240	235	240	235	230	265	245			235	3
10	245	225	230	225	240	255	240				
10	260	225	230	195	220	235	230				
12	280	255	260	215	225	250	230			245	5
12	265	250	270	205	230	250	235				
12	270	260	265	200	240	260	225				
14	250	265	275	230	260	270	235			246	4
14	255	255	265	215	260	250	230				
14	245	245	270	190	240	240	230				
16	280	290	265	215	235	250	230			245	6
16	275	270	260	200	215	240	230				
16	275	260	260	200	230	240	225				
18	270	265	285	245	230	260	230			253	4
18	280	265	280	230	230	245	250				
18	285	240	280	225	230	250	235				
20	290	280	325	250	255	255	240			270	6
20	280	285	320	230	260	270	250				
20	275	275	315	235	260	260	250				
22	280	270	380	220	360	275	250			282	10
22	280	270	360	220	300	280	255				
22	295	265	360	220	280	270	240				
24	295	275	350	215	260	255	290			281	8
24	305	275	345	250	260	255	285				
24	310	275	375	235	265	255	275				
26	330	270	340	225	305	255	250			280	8
26	310	270	340	220	310	260	260				
26	310	280	320	260	260	250	255				
28	290	255	320	210	270	255	245			261	7
28	280	255	320	225	270	260	235				
28	275	260	305	205	255	260	235				
30	290	250	315	215	270	255	230			258	6
30	270	250	305	215	260	255	230				
30	305	265	290	215	255	240	230				
32	265	250	295	220	240	250	245			251	5
32	270	250	315	220	235	250	235				

32	270	245	290	225	230	245	235				
34	265	240	300	205	235	225	240			246	5
34	265	240	285	210	270	225	240				
34	260	235	285	225	250	220	240				
36	260	240	280	200	240	235	245			240	5
36	245	230	280	200	235	235	240				
36	255	235	275	205	240	240	235				
38	250	240	280	200	225	245	235			239	5
38	245	235	280	200	215	245	235				
38	250	235	270	220	240	235	230				
42	255	245	280	210	250	250	235			244	4
42	250	245	280	205	250	245	235				
42	250	245	270	200	240	245	235				
46	250	240	270	210	230	245	230			237	4
46	250	230	270	210	225	250	230				
46	245	230	270	205	220	240	230				
50	235	230	260	210	230	240	235			236	3
50	235	225	260	220	230	240	235				
50	245	245	265	215	225	245	235				
54	240	230	255	205	250	255	240			237	4
54	230	225	255	205	240	240	235				
54	250	225	260	200	255	240	250				
57	240	235	250	220	250	240	220			236	3
57	235	235	250	215	250	240	225				
57	245	235	250	210	235	245	225				
61	245	230	255	210	250	240	220			236	3
61	245	230	255	220	250	240	220				
61	245	230	260	210	250	245	215				
68	240	240	235	205	245	225	235			231	3
68	240	235	240	205	230	230	245				
68	230	230	240	190	245	230	240				
75	245	225	260	195	260	240	225			237	4
75	250	220	260	220	245	240	225				
75	250	230	260	205	255	245	230				
82	250	230	270	200	240	240	230			236	4
82	250	235	270	200	240	225	230				
82	250	230	265	195	245	230	230				
89	255	230	265	205	240	230	245			237	3
89	240	225	260	235	250	225	245				
89	250	225	255	225	235	215	230				
96	240	240	250	210	235	250	240			237	3
96	240	240	250	205	235	225	245				
96	240	250	245	230	240	230	240				
103	215	225	235	190	235	230	225			220	3
103	220	225	230	190	220	230	225				
103	215	225	225	190	215	225	230				

110	230	225	225	195	230	220	215			217	2
110	225	215	225	185	220	220	215				
110	225	220	225	200	210	215	220				
117	230	245	250	230	245	245	250			239	3
117	230	240	250	205	245	245	245				
117	225	235	245	205	250	250	245				
124	245	235	245	245	245	240	215			236	3
124	245	240	250	195	245	240	215				
124	250	230	240	235	255	235	205				
131	235	225	235	200	225	245	240			231	3
131	235	220	230	230	230	240	265				
131	235	220	230	220	230	235	235				
138	230	225	225	225	225	220	235			225	1
138	225	225	230	220	220	220	235				
138	225	220	235	220	220	215	235				
145	225	230	230	185	220	265	220			226	5
145	225	230	225	185	225	265	225				
145	220	230	230	190	225	275	225				
151	225	215	240	180	220	225	205			216	4
151	230	220	235	180	215	225	205				
151	230	220	235	185	220	220	205				
159	225	220	230	205	225	230	225			221	2
159	225	220	225	205	230	230	225				
159	220	215	225	200	220	225	225				
168	250	240	240	200	250	245	220			235	3
168	245	245	240	210	250	245	220				
168	240	235	235	205	245	250	225				
175	245	235	230	210	235	250	230			232	3
175	240	230	230	200	230	245	240				
175	250	220	230	200	230	245	240				
ear thickness	Conventional dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 8	26	34	40	48	54	62			mean	SEM
0	245	265	250	245	230	225	210			236	3
0	240	240	225	240	235	220	230				
0	260	245	245	235	230	220	220				
2	265	240	230	215	245	250	265			239	3
2	255	225	230	215	230	230	255				
2	255	240	235	215	225	250	255				
4	255	265	225	265	210	210	285			240	5
4	250	255	225	250	210	210	270				
4	245	245	235	245	210	210	265				
6	235	265	240	235	265	250	225			247	4
6	235	265	240	230	265	250	275				
6	230	270	230	225	270	240	255				

8	265	240	240	215	230	235	240			239	3
8	270	240	235	235	255	230	240				
8	235	240	230	240	220	235	245				
10	240	270	245	240	275	245	240			252	3
10	240	265	245	235	275	245	255				
10	275	255	240	230	285	240	255				
12	285	250	230	235	240	235	255			246	4
12	290	255	230	235	235	235	250				
12	280	245	230	235	230	250	245				
14	305	260	250	240	245	250	270			258	5
14	300	260	255	235	245	250	260				
14	320	255	240	230	230	255	260				
16	320	265	240	275	265	270	350			275	6
16	310	260	255	270	265	250	305				
16	300	255	260	260	270	240	290				
18	350	270	290	330	280	265	370			302	9
18	345	260	290	290	280	260	375				
18	335	260	275	290	280	255	390				
20	490	290	340	340	320	260	370			352	15
20	450	285	370	375	305	255	355				
20	430	280	450	375	350	265	430				
22	490	340	610	450	350	270	380			402	20
22	480	335	560	440	320	265	420				
22	465	330	510	430	325	280	390				
24	610	335	320	520	425	270	430			407	22
24	580	345	360	490	400	270	430				
24	560	330	320	480	380	275	425				
26	700	330	315	420	420	265	370			399	27
26	660	330	310	490	400	260	370				
26	650	335	320	400	385	260	390				
28	550	325	305	350	370	250	345			349	19
28	550	325	280	300	360	250	335				
28	545	315	290	375	340	245	320				
30	480	305	285	330	330	250	310			320	15
30	470	300	265	330	320	250	305				
30	460	290	255	325	320	250	300				
32	400	305	260	300	305	250	300			302	11
32	420	300	250	280	300	250	300				
32	425	300	255	300	295	245	295				
34	375	290	270	300	280	245	285			286	8
34	360	280	250	290	280	245	285				
34	375	280	245	280	275	230	280				
36	330	290	255	280	280	240	290			280	6
36	330	290	275	250	270	255	285				
36	345	290	260	265	270	245	280				
38	335	285	260	280	255	240	285			274	6

38	335	260	260	280	255	240	290				
38	325	250	280	260	250	245	275				
42	325	265	250	265	260	240	290			270	6
42	320	260	250	250	275	235	290				
42	315	255	260	255	270	230	300				
46	310	265	235	260	255	245	270			261	5
46	310	265	230	255	255	240	270				
46	310	260	240	245	250	240	275				
50	300	260	245	245	250	245	270			258	4
50	290	245	245	245	250	240	270				
50	300	250	240	255	245	255	270				
54	310	245	255	250	270	255	270			263	5
54	310	245	255	245	260	250	275				
54	315	250	260	240	240	250	265				
57	305	255	245	255	250	235	275			259	5
57	300	260	255	245	250	235	275				
57	315	250	245	250	240	235	270				
61	330	260	270	260	250	250	270			265	5
61	330	260	260	250	250	240	270				
61	305	265	250	250	245	240	265				
68	310	245	255	290	245	225	275			259	6
68	310	245	240	280	240	230	265				
68	305	230	235	280	240	230	260				
75	285	240	240	255	245	240	260			252	3
75	290	240	250	245	245	250	250				
75	270	235	245	250	240	255	265				
82	290	260	225	240	240	230	265			251	4
82	295	260	235	240	240	230	265				
82	275	255	245	235	235	245	260				
89	285	255	250	245	245	230	260			253	3
89	280	265	250	240	245	235	260				
89	260	255	240	255	250	255	245				
96	280	270	235	245	240	240	255			252	3
96	270	265	260	245	225	240	250				
96	270	260	255	245	230	260	245				
103	250	260	245	230	230	235	245			240	3
103	265	250	245	220	225	235	240				
103	260	250	250	220	220	235	240				
110	240	260	225	215	225	230	255			236	3
110	235	250	235	215	230	235	275				
110	225	245	230	225	225	235	245				
117	270	255	265	235	245	230	280			253	4
117	270	255	270	235	240	230	270				
117	280	250	255	240	240	225	275				
124	250	250	270	230	245	230	250			246	3
124	250	250	280	235	245	220	250				

124	260	250	255	240	245	220	250				
131	260	250	235	230	230	245	255			240	2
131	240	245	230	230	230	240	255				
131	235	245	250	225	225	235	255				
138	250	235	265	215	205	230	265			237	5
138	240	240	255	220	200	220	265				
138	240	260	250	225	205	220	265				
145	250	225	255	220	225	220	245			238	4
145	245	225	280	220	225	245	245				
145	240	225	275	215	225	250	245				
151	260	235	255	200	215	200	265			232	5
151	250	240	245	200	215	205	250				
151	245	250	245	195	215	230	255				
159	230	235	260	225	210	240	250			231	3
159	235	230	245	215	210	230	245				
159	225	230	250	210	210	225	245				
168	245	260	350	220	240	230	250			253	8
168	245	245	370	225	230	235	245				
168	240	250	300	230	235	230	245				
175	260	250	275	225	235	245	250			249	4
175	255	230	290	230	240	240	250				
175	270	225	280	230	240	250	250				
ear thickness	Flash9 dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 1	10	58							mean	SEM
0	265	240	220							240	6
0	250	230	220								
0	240	270	225								
2	235	290	240							249	8
2	240	280	230								
2	235	280	215								
4	270	250	215							231	6
4	235	230	220								
4	215	225	215								
6	255	230	250							244	5
6	255	230	245								
6	245	215	270								
8	260	250	230							246	3
8	255	245	240								
8	255	250	230								
10	235	225	245							234	3
10	225	230	250								
10	230	230	235								
12	245	270	245							245	4
12	245	260	240								

12	235	240	225								
14	235	250	245							244	3
14	255	250	245								
14	225	245	250								
16	255	285	260							258	4
16	230	255	260								
16	255	265	255								
18	260	275	255							263	3
18	280	270	255								
18	255	270	250								
20	320	290	280							292	7
20	315	300	265								
20	270	315	270								
22	325	310	300							318	12
22	390	325	275								
22	360	300	275								
24	305	315	295							301	3
24	295	305	310								
24	290	300	290								
26	270	290	270							274	3
26	265	285	270								
26	265	280	270								
28	260	280	270							268	4
28	260	275	265								
28	255	290	260								
30	260	290	260							266	4
30	270	270	255								
30	260	280	245								
32	265	255	245							254	3
32	260	260	240								
32	260	265	240								
34	260	265	245							255	3
34	255	265	245								
34	255	265	240								
36	260	250	260							252	2
36	245	250	250								
36	245	250	255								
38	255	270	240							254	4
38	250	270	245								
38	245	265	250								
42	250	280	250							259	5
42	250	275	250								
42	245	285	250								
46	250	260	250							254	2
46	250	260	245								
46	260	265	250								

50	250	250	240							243	2
50	240	245	240							243	2
50	235	245	245								
54	240	260	250							249	3
54	245	260	250							249	3
54	235	260	245								
57	265	245	240							244	3
57	250	240	240							244	3
57	250	225	240								
61	270	260	250							259	2
61	270	260	250							259	2
61	260	260	250								
68	240	230	240							240	2
68	240	235	240							240	2
68	245	240	250								
75	250	240	255							244	2
75	240	240	245							244	2
75	235	250	245								
82	250	240	245							241	4
82	250	240	250							241	4
82	250	220	225								
89	260	255	250							256	2
89	260	250	255							256	2
89	260	250	265								
96	255	255	250							249	2
96	255	255	245							249	2
96	250	240	235								
103	235	240	235							232	1
103	230	235	230							232	1
103	230	230	225								
110	225	225	230							226	1
110	225	230	230							226	1
110	220	220	230								
117	230	250	240							239	3
117	230	250	240							239	3
117	225	255	235								
124	235	245	250							242	2
124	235	245	240							242	2
124	240	250	235								
131	230	250	225							233	3
131	225	245	225							233	3
131	220	245	230								
138	265	245	230							242	4
138	250	245	230							242	4
138	245	240	230								
145	235	240	230							235	1

145	235	240	230								
145	230	240	235								
151	225	260	220							232	5
151	220	250	220								
151	220	250	220								
159	230	210	230							223	3
159	230	210	230								
159	230	210	225								
168	240	235	235							236	1
168	240	235	240								
168	235	230	230								
175	245	230	240							236	2
175	240	230	240								
175	235	225	240								
ear thickness	Flash930 dose rate 33 Gy										
time after irradiation [d]	Mouse ID: 9	19	21	23	41	47	49	61	63	mean	SEM
0	260	250	220	270	275	270	255	230	245	252	3
0	245	285	285	260	270	270	240	250	235		
0	215	245	250	250	260	255	240	240	240		
2	335	310	265	230	275	245	225	250	240	257	5
2	290	285	255	225	270	245	240	240	245		
2	285	285	250	225	260	265	240	235	230		
4	250	250	270	245	250	220	225	240	240	240	3
4	250	255	260	235	240	220	220	240	240		
4	240	260	260	245	235	215	220	235	230		
6	240	230	255	285	295	245	240	230	275	249	4
6	235	225	260	250	275	235	250	230	255		
6	230	225	255	265	285	240	245	225	250		
8	255	255	250	235	270	220	230	285	245	244	4
8	250	255	245	225	245	215	235	265	220		
8	255	235	240	295	240	220	240	240	230		
10	255	265	275	240	250	255	240	240	235	247	3
10	255	270	260	235	245	255	235	235	225		
10	270	220	270	260	245	255	225	235	210		
12	290	245	295	255	265	225	230	235	255	251	4
12	280	240	280	255	235	230	230	230	250		
12	280	235	280	270	255	235	225	230	245		
14	300	255	300	265	255	240	250	220	250	258	4
14	275	255	275	265	260	255	250	240	250		
14	265	260	295	255	260	245	245	235	235		
16	280	255	300	255	285	295	260	265	265	268	3
16	285	255	290	255	255	290	260	255	260		
16	275	260	290	260	260	285	255	250	245		
18	300	290	330	395	325	265	260	260	275	289	6

18	300	285	320	300	315	255	250	270	260		
18	310	280	310	290	310	270	250	280	255		
20	365	325	330	340	320	280	260	255	280	314	7
20	370	340	330	350	300	280	310	275	300		
20	415	325	330	340	275	290	270	260	350		
22	350	450	380	350	405	290	270	255	360	345	11
22	360	450	365	350	400	320	265	260	345		
22	335	460	360	400	360	310	260	295	320		
24	360	520	370	370	380	300	260	250	330	343	14
24	350	520	360	390	340	290	285	255	305		
24	345	480	360	390	360	270	260	260	300		
26	330	475	340	370	350	275	280	260	310	328	11
26	330	475	335	345	330	275	280	260	315		
26	340	460	330	345	310	280	285	255	315		
28	315	420	330	330	320	265	250	255	300	306	10
28	300	400	325	320	305	265	250	245	305		
28	310	410	320	390	285	260	245	245	285		
30	290	400	305	305	270	270	245	260	300	291	9
30	300	405	290	305	270	260	240	245	300		
30	295	390	290	340	275	250	240	240	290		
32	275	350	275	280	260	255	240	240	290	274	6
32	280	350	270	280	260	245	245	240	295		
32	285	345	280	280	255	245	245	245	285		
34	285	310	280	265	270	250	235	235	285	265	5
34	275	325	270	260	265	245	235	225	270		
34	275	315	275	260	275	245	235	220	275		
36	260	305	265	270	260	245	245	255	265	266	3
36	280	310	260	265	270	250	245	275	275		
36	270	310	260	265	270	250	240	260	270		
38	270	315	265	260	255	240	220	235	270	258	4
38	270	300	255	270	255	240	230	230	265		
38	270	285	255	270	255	240	240	240	260		
42	260	295	270	235	255	250	260	240	260	257	3
42	270	285	265	230	250	250	255	230	270		
42	260	280	265	255	250	255	245	235	265		
46	245	280	270	260	235	240	230	240	275	252	3
46	245	280	265	255	240	240	230	230	265		
46	255	280	265	255	260	240	230	235	265		
50	265	245	250	260	280	245	235	240	280	255	3
50	265	245	250	255	280	245	235	235	280		
50	265	240	255	265	290	250	240	220	265		
54	240	270	255	265	270	250	245	240	265	253	2
54	245	275	240	260	265	250	245	245	250		
54	245	265	240	250	255	245	240	245	265		
57	255	260	260	260	245	245	250	225	290	253	3
57	260	280	250	255	250	235	245	245	270		

57	250	265	250	255	245	220	245	230	285		
61	265	265	260	255	245	245	250	235	275	256	2
61	265	260	260	255	250	245	250	235	290		
61	270	260	260	255	255	245	255	240	265		
68	250	245	255	245	245	240	245	225	265	244	2
68	255	235	250	240	250	240	245	225	255		
68	260	240	245	235	250	240	250	215	245		
75	255	250	260	245	240	245	245	220	250	246	2
75	250	245	255	245	240	245	245	220	260		
75	260	255	255	240	240	255	245	225	255		
82	245	270	260	250	235	240	250	240	265	247	2
82	235	270	255	250	245	230	250	230	260		
82	240	245	250	250	240	235	245	230	245		
89	250	240	260	250	235	240	245	255	245	244	2
89	250	240	250	250	235	240	245	245	260		
89	250	230	245	230	230	235	245	235	255		
96	280	255	230	255	235	255	245	230	250	243	3
96	260	245	230	255	230	250	245	220	245		
96	255	235	235	250	225	240	245	225	245		
103	240	240	225	245	265	230	220	250	220	237	2
103	240	235	235	240	260	225	225	245	230		
103	235	225	230	235	265	225	235	240	230		
110	225	235	235	235	230	225	220	240	240	230	2
110	220	225	225	225	225	225	220	235	255		
110	225	225	225	225	225	225	225	235	255		
117	250	250	240	225	255	245	240	225	280	244	3
117	250	250	240	230	245	235	235	230	275		
117	245	245	250	230	245	235	235	240	270		
124	265	250	230	210	245	245	250	220	240	241	3
124	270	260	230	210	240	250	250	235	245		
124	260	255	225	220	240	240	250	225	235		
131	255	250	230	245	240	250	230	230	240	233	2
131	235	240	220	220	230	235	230	225	240		
131	230	230	220	205	230	230	230	225	235		
138	255	275	210	225	240	240	225	230	225	236	4
138	260	275	210	220	235	245	220	230	230		
138	265	270	215	220	235	245	215	230	235		
145	245	270	220	220	250	235	225	235	225	235	3
145	240	260	220	225	245	230	220	235	230		
145	250	260	225	230	240	230	220	235	225		
151	245	295	230	215	240	215	220	215	215	232	4
151	255	280	225	220	240	220	215	220	210		
151	260	280	230	220	235	220	210	220	210		
159	245	290	230	235	230	245	230	220	245	238	4
159	225	290	235	235	225	245	225	220	240		
159	225	280	235	230	225	235	225	215	240		

168	245	275	235	250	235	245	250	230	245	244	3
168	250	275	235	230	230	245	240	230	250		
168	250	275	240	235	230	250	235	225	250		
175	250	245	240	230	250	245	245	220	275	243	3
175	255	260	240	230	240	245	240	225	275		
175	250	260	240	220	235	240	220	220	265		
ear thickness	Sham irradiated 0 Gy										
time after irradiation [d]	Mouse ID: 15	24	25	28	29	45	59			mean	SEM
0	240	260	270	240	250	230	270			246	3
0	230	240	265	240	265	225	265				
0	230	240	240	235	250	240	250				
2	250	270	225	260	225	240	220			238	4
2	240	270	225	230	230	260	220				
2	245	265	225	230	225	235	215				
4	250	230	225	240	235	265	245			242	3
4	255	240	265	235	235	235	230				
4	260	230	255	230	250	235	230				
6	235	245	230	235	225	245	235			241	4
6	230	235	225	275	285	245	245				
6	225	225	225	255	270	245	230				
8	260	290	250	250	225	230	240			245	4
8	225	290	250	250	230	230	265				
8	240	225	260	240	235	230	235				
10	235	230	220	255	240	245	235			237	3
10	240	235	220	260	265	235	230				
10	235	230	220	255	240	240	220				
12	260	260	245	245	250	245	225			244	2
12	260	235	230	250	230	250	235				
12	250	245	225	255	240	255	235				
14	260	255	230	255	240	240	245			246	2
14	245	255	230	255	255	240	250				
14	255	250	235	260	235	235	240				
16	270	240	225	255	250	245	245			246	3
16	265	240	230	245	255	245	245				
16	270	230	225	240	240	265	240				
18	255	260	225	260	230	245	235			243	3
18	255	255	220	270	225	245	230				
18	250	255	220	260	225	250	230				
20	265	255	235	255	275	260	235			249	3
20	255	255	230	250	280	250	230				
20	255	250	230	235	255	245	230				
22	250	270	240	275	235	255	250			252	3
22	250	260	255	290	235	240	250				
22	250	260	240	275	230	235	245				

24	250	265	255	255	260	250	250			252	2
24	250	260	240	255	250	245	245				
24	255	260	235	270	265	240	240				
26	245	250	245	290	260	235	250			253	4
26	240	250	240	285	260	240	245				
26	240	245	240	290	280	235	240				
28	245	255	230	305	240	230	240			251	5
28	250	250	230	305	240	240	235				
28	250	250	240	290	270	235	235				
30	250	265	230	280	240	245	240			247	3
30	250	265	230	275	240	245	235				
30	245	260	225	265	230	245	235				
32	250	260	235	280	260	250	245			252	3
32	250	260	235	280	245	245	245				
32	250	260	235	275	245	245	250				
34	250	265	230	255	240	245	255			249	3
34	245	255	230	265	245	250	255				
34	245	260	240	275	235	235	250				
36	240	250	220	270	230	245	255			242	4
36	245	250	220	280	230	220	250				
36	245	250	220	275	225	215	245				
38	255	255	225	270	240	230	240			245	3
38	255	255	225	275	245	230	240				
38	255	245	225	270	250	230	235				
42	255	235	230	280	245	235	245			245	3
42	255	240	235	270	235	240	240				
42	250	240	230	270	230	240	240				
46	245	240	245	255	240	235	250			246	2
46	240	240	245	270	240	235	250				
46	255	240	245	260	250	235	255				
50	255	245	240	280	230	240	255			245	3
50	240	245	235	275	230	240	240				
50	245	230	235	270	230	240	245				
54	240	240	245	285	260	270	245			251	3
54	250	245	230	285	250	255	245				
54	245	245	230	270	245	250	245				
57	240	240	230	275	250	230	240			250	6
57	240	240	230	285	265	230	240				
57	240	245	230	280	340	240	245				
61	240	250	230	285	250	250	240			249	4
61	240	250	230	285	260	250	220				
61	245	245	235	285	245	250	235				
68	230	240	235	255	255	230	245			242	2
68	250	230	235	255	245	230	245				
68	250	235	230	255	245	230	250				
75	245	245	230	270	275	245	245			250	3

75	245	245	230	270	270	245	245				
75	250	250	230	275	270	240	240				
82	240	240	230	285	250	235	265			250	4
82	250	250	230	280	250	235	265				
82	250	230	225	280	255	240	260				
89	255	230	240	295	260	240	240			254	4
89	255	235	245	300	260	245	240				
89	250	250	235	305	255	245	250				
96	255	250	240	290	260	250	235			253	4
96	250	245	240	290	260	240	235				
96	250	240	250	290	260	240	240				
103	230	240	220	285	270	220	245			243	5
103	235	235	215	280	265	235	240				
103	230	230	210	280	260	225	245				
110	225	230	215	280	250	225	215			234	4
110	220	225	210	270	260	235	220				
110	220	220	220	270	255	230	220				
117	240	235	240	255	260	220	255			244	3
117	240	245	235	245	260	230	255				
117	240	240	235	245	270	230	245				
124	240	250	245	275	255	245	240			248	2
124	240	250	245	270	255	240	235				
124	235	250	235	270	250	240	250				
131	235	235	255	255	260	250	245			247	5
131	230	230	245	330	255	250	245				
131	230	225	210	275	255	245	235				
138	225	225	215	290	245	225	220			234	5
138	225	225	210	280	245	230	225				
138	220	220	215	275	240	230	225				
145	235	235	210	260	230	225	225			232	4
145	235	230	210	270	235	220	225				
145	235	230	215	275	240	215	220				
151	210	230	210	265	255	220	220			233	4
151	220	220	210	265	255	230	230				
151	225	225	215	260	255	230	235				
159	245	225	210	280	235	225	235			237	4
159	235	235	210	280	235	225	235				
159	230	230	210	270	250	220	250				
168	250	255	230	280	240	240	260			248	3
168	250	245	230	275	230	240	255				
168	255	250	235	270	225	245	245				
175	235	250	230	260	235	230	260			243	3
175	250	235	225	260	235	235	260				
175	245	245	230	265	230	240	250				

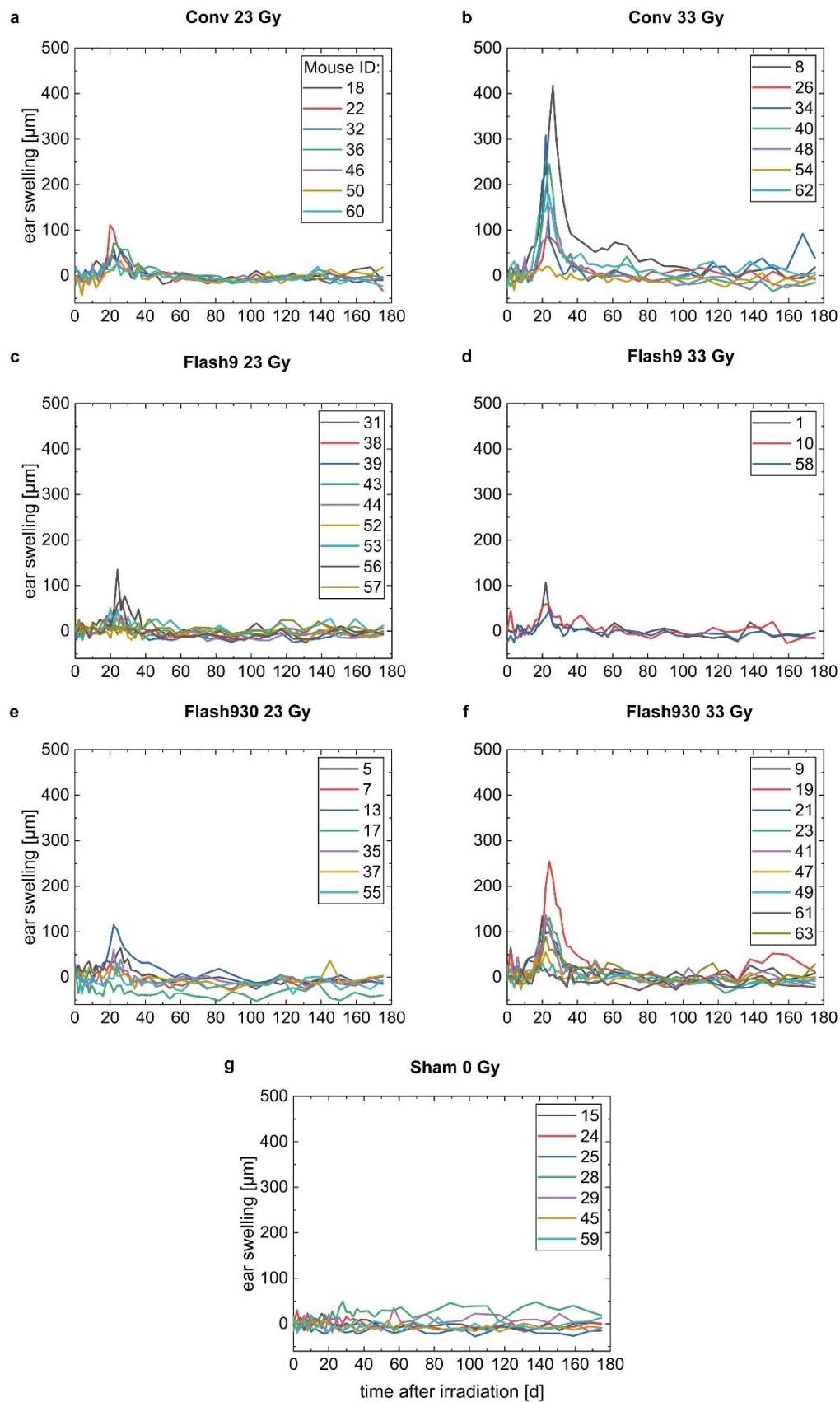


Figure S1: The ear swelling measurements during the monitoring period of 180 days after irradiation are shown for each mouse. The mice were assigned to seven irradiation groups. In these groups, three different dose rates and two different doses were studied. In a and b the mice were irradiated with a dose rate of 0.06 Gy/s, in c and d with 9.3 Gy/s and in e and f with 930 Gy/s. Mice in a, c and e received a dose of 23 Gy and in b, d and f a dose of 33 Gy. In g, the mice were sham irradiated. The ear swelling is defined as the ear thickness minus the ear thickness of the sham mice. The ear thickness was measured twice by a measuring gauge. The raw data can be found in Supplementary Table S2.

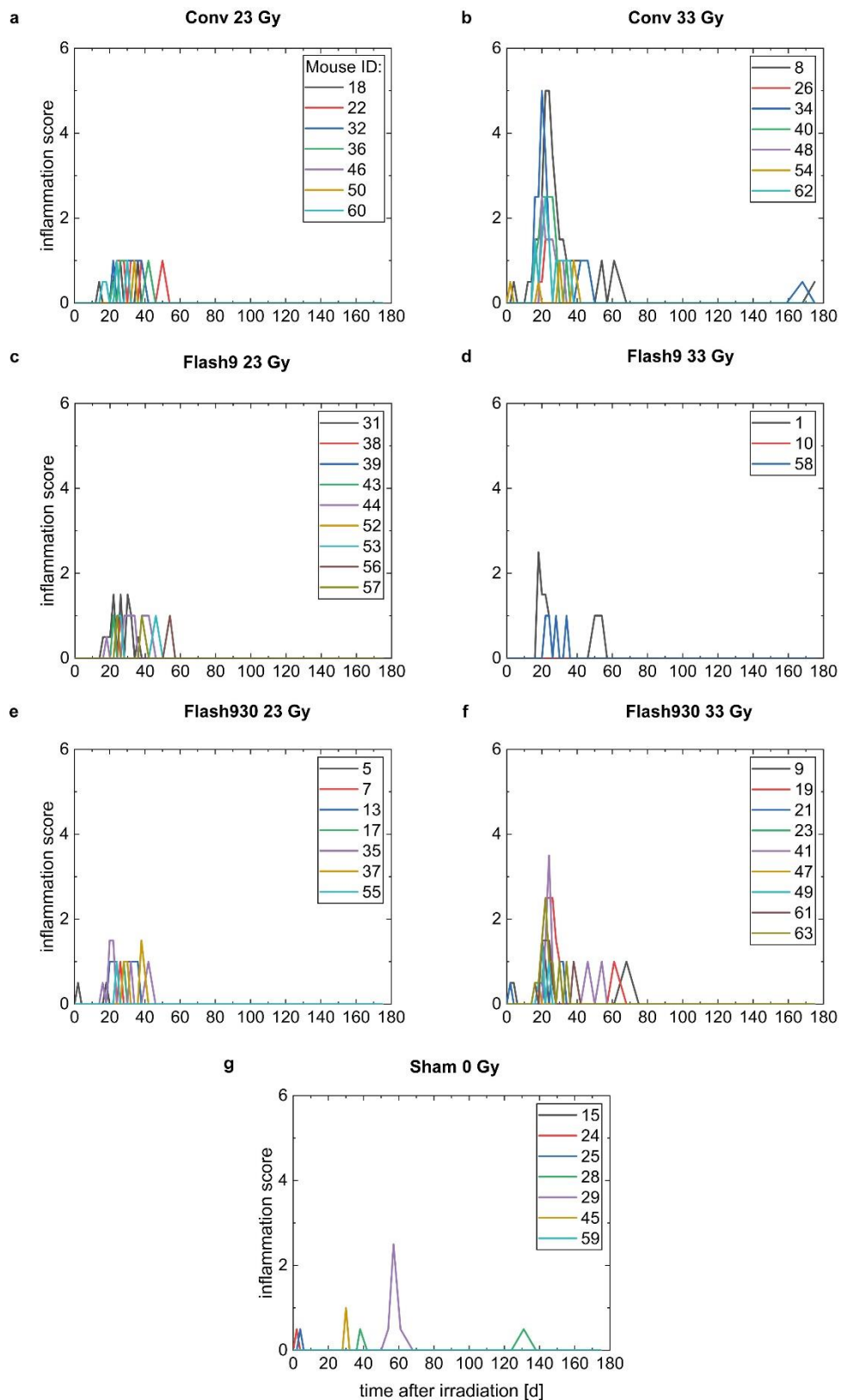


Figure S2: The inflammation scores during the monitoring period of 180 days after irradiation are shown for each mouse. The mice are assigned to seven irradiation groups. In these groups three different dose rates and two different doses were studied. In a and b the mice were irradiated with a dose rate of 0.06 Gy/s, in c and d with 9.3 Gy/s and in e and f with 930 Gy/s. Mice in a, c and e received a dose of 23 Gy and in b, d and f a dose of 33 Gy. In g, the mice were sham irradiated. The inflammation score is the sum of the erythema score and the desquamation score according to Table 1. The raw data can be find in Supplementary Table S2.

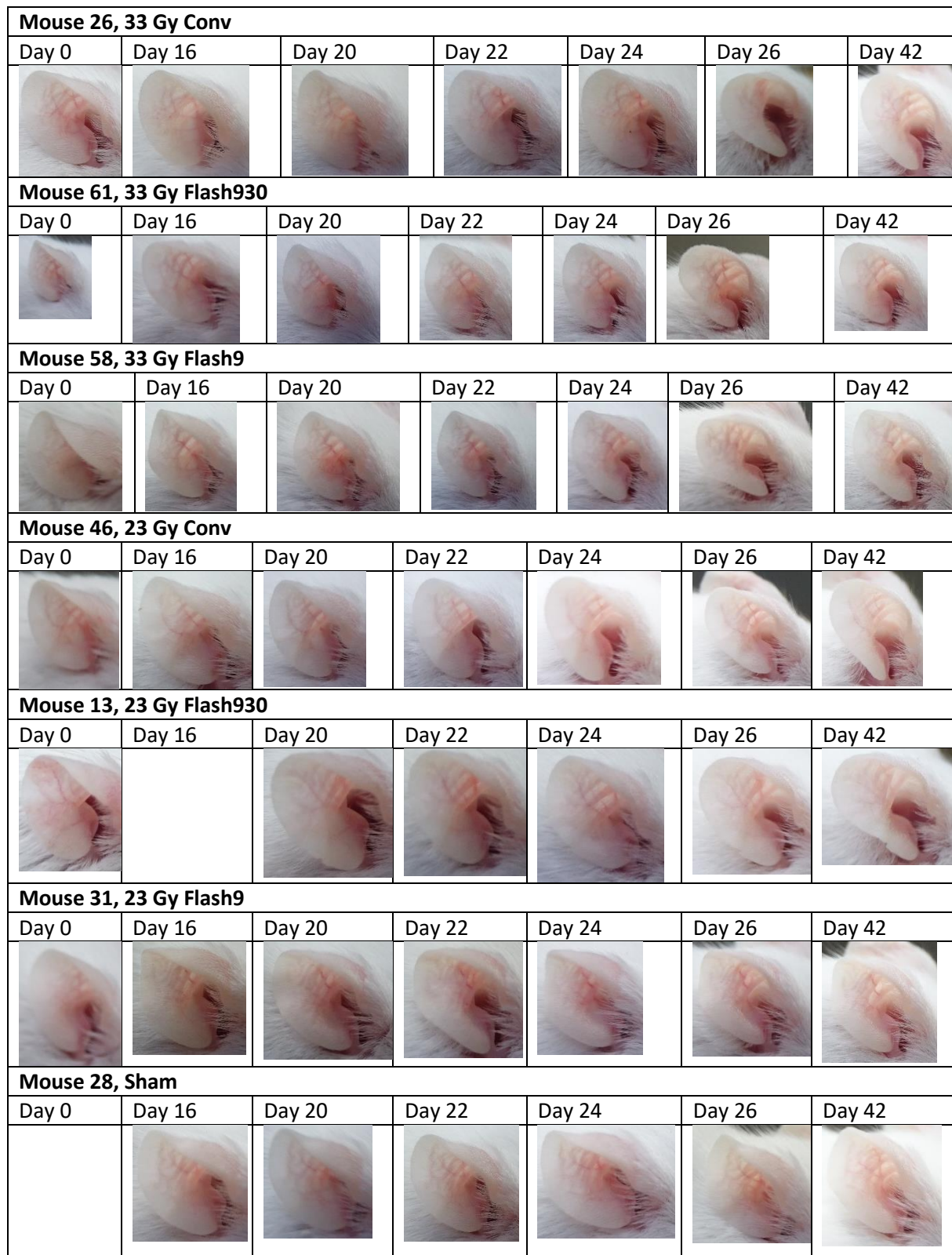


Figure S3: Photographs of the right ears of one mouse in each group for different time points. Because of the stress the photos cause the animals, not all of them could be photographed for animal welfare reasons.

Table S3: The measurements of the qPCR are listed for week 1, week 3, week 4, and the blood sampling at determination day (FIN). CT-tech is the mean of the three replica measured for every blood sample at a certain time point. CT-bio is the mean of every measured cytokine or house-keeping gene in one of the four groups (sham, Flash930 33 Gy, Flash9 33 Gy and Conv 33 Gy) at a certain time point. CT-HK is the mean of cT-bio of the two house-keeping genes for every group at a certain time point. Δ cT is calculated by subtracting the cT-HK of a group at a certain time point from the cT-bio of a cytokine of a group at a certain time point. $\Delta\Delta$ cT is calculated by subtracting the Δ cT of the sham group of a cytokine at a certain time point from the Δ cT of one of the irradiated groups of a cytokine at a certain time point. The fold change (FC) is calculated by Equation 1 and the log2 fold change by Equation 2.

Week 1	Gene	Mouse ID	Tech. Rep.	Ø cT-tech	Ø cT-bio	Ø cT-HK	ΔcT (primer-HK)	ΔΔcT (ir-sham)	Fold change	Log2 fold change	StDv					
sham	B2M	24	22.7	23.0	22.6	24.2										
			23.0													
			23.3													
		25	22.2	21.7												
			21.4													
			21.7													
		28	22.1	22.1												
			22.3													
			21.9													
		45	23.4	23.5												
			23.4													
			23.7													
	Gapdh	24	26.3	26.3	25.9											
			26.3													
			26.3													
		25	25.1	25.5												
			25.1													
			26.3													
		28	25.6	25.8												
			25.8													
			25.8													
		45	26.5	26.0												
			25.9													
			25.8													
	TGFbeta	24	26.0	26.0	25.9	1.6										
			25.8													
			26.0													
		25	26.0	25.8												
			25.5													
			25.9													
		28	25.8	25.7												
			25.7													
			25.6													
		45	26.3	26.1												
			25.9													
			26.0													
	TNF	24	33.6	33.4	33.6		9.3									

Flash930 33 Gy		25	34.4	33.1										
			32.2											
			Undetermined											
		31.8												
		28	32.3	32.9										
			32.0											
			34.5											
		45	34.5	34.9										
			35.3											
			Undetermined											
		IL1a	24	37.3				35.2	34.8	10.6				
				34.4										
				34.0										
			25	33.8				34.7						
				35.9										
	34.5													
	28		32.6	33.0										
			33.3											
			Undetermined											
	45		Undetermined	36.3										
			37.8											
			34.8											
	IL1b		24	25.8				25.7			25.6	1.4		
				25.7										
				25.6										
		25	25.3	25.5										
			25.9											
			25.3											
		28	26.0	25.7										
			25.7											
			25.5											
		45	25.7	25.5										
			25.5											
			25.3											
		B2M	9	22.7				22.7		22.0			24.1	
				22.5										
				22.7										
	19		22.7	22.8										
			22.7											
			22.9											
	21		22.6	22.5										
			22.3											
			22.5											
	23		22.8	23.0										
22.7														

			23.4															
		41	21.0	21.0														
			21.2															
			20.9															
		47	20.9	20.9														
			20.9															
			20.9															
		49	21.6	21.4														
			21.4															
			21.3															
		GAPDH	9	26.9							26.7	26.2						
	26.8																	
	26.3																	
	19		25.9	26.3														
			26.4															
			26.5															
	21		26.2	26.2														
			26.3															
			26.0															
	23		26.6	26.7														
			26.7															
			26.8															
	41		25.5	25.5														
			25.6															
			25.4															
	47		25.6	25.4														
			25.4															
			25.2															
	49		26.4	26.4														
			26.3															
			26.4															
	TGfbeta		9	26.3							26.3		26.0	1.9	0.3	0.8	-0.3	0.7
				26.3														
				26.3														
		19	26.2	26.4														
26.6																		
26.5																		
21		26.0	26.4															
		26.7																
		26.4																
23		26.5	26.6															
		26.4																
		27.0																
41		25.6	25.2															
		25.0																

			25.0										
		47	24.7	24.9									
			25.0										
			24.9										
		49	26.2	26.2									
			26.2										
	26.2												
	TNF	9	32.5	32.5	32.7								
			32.1										
			32.9										
		19	35.0	34.4									
			32.9										
			35.2										
		21	32.5	32.7									
			32.4										
			33.3										
		23	34.2	33.8									
			33.7										
			33.5										
		41	31.7	32.0									
			32.1										
			32.1										
		47	30.9	31.2									
			31.5										
			31.0										
		49	32.6	32.4									
			32.6										
			32.1										
		IL1A	9	33.7								33.6	33.5
				32.7									
				34.5									
			19	33.4								33.6	
				34.2									
				33.1									
	21		32.5	33.9									
33.6													
35.7													
23	33.2		33.1										
	32.5												
	33.7												
41	31.9		32.9										
	33.3												
	33.5												
47	32.5		33.3										
	34.3												
	33.0												

		49	34.5	33.9								
			33.8									
			33.2									
	IL1B	9	25.3	24.9								25.4
			24.9									
			24.5									
		19	25.7	26.0								
			26.2									
			25.9									
		21	26.1	26.3								
			26.4									
			26.4									
		23	25.1	25.2								
			25.1									
			25.3									
		41	24.7	24.6								
			24.5									
			24.7									
		47	25.6	25.5								
			25.6									
			25.5									
49	25.3	25.2										
	25.3											
	25.2											
Conv 33 Gy	B2M	26	22.9	22.8	22.6	24.3						
			22.8									
			22.8									
		34	22.4	22.4								
			22.4									
			22.5									
		40	22.9	22.8								
			22.8									
			22.9									
		48	22.9	22.7								
			22.7									
			22.6									
		54	22.4	22.2								
			22.1									
			21.9									
	GAPDH	26	26.6	26.7	26.1							
			26.5									
			27.1									
		34	26.0	26.1								
			26.2									
			25.9									
40	26.4	26.3										

			26.3								
			26.2								
			48								
		26.1									
		25.9									
		54	25.4	25.6							
			25.7								
			25.6								
		TGFbeta	26	26.1							
	25.8										
	25.9										
	34		25.9	25.8							
			25.8								
			25.7								
	40		26.0	26.0							
			25.9								
			26.1								
	48		26.1	26.3							
			26.4								
			26.3								
	54		25.2	25.3							
			25.4								
			25.4								
	TNF	26	33.7	33.1	32.9		8.6	-0.8	1.7	0.8	0.7
			32.9								
			32.6								
		34	32.2	33.1							
			33.5								
			33.8								
		40	34.0	33.8							
			33.6								
			33.9								
		48	32.9	32.6							
			31.5								
			33.2								
		54	31.5	32.1							
			32.4								
			32.2								
	IL1A	26	33.2	33.7	34.2		9.8	-0.7	1.7	0.7	0.8
			34.4								
			33.5								
		34	35.2	34.2							
			34.0								
			33.3								
	40	36.9	35.0								

			34.4	33.0	25.6		1.2	-0.1	1.1	0.1	0.6	
			33.6									
			48									32.6
			33.2									
			33.3									
			54	35.0								34.9
		34.8										
		35.0										
		IL1B	26	26.1								26.0
	26.0											
	26.0											
	34		25.0	25.3								
			25.3									
			25.5									
	40		26.0	26.1								
			26.2									
			26.2									
	48		25.7	25.7								
			25.6									
		25.8										
54	24.8	24.8										
	24.9											
	24.7											
Flash9 33 Gy	B2M	1	23.1	22.9	22.4	24.0						
			22.8									
			22.8									
		58	21.9	21.8								
			21.8									
			21.6									
	GAPDH	1	25.9	26.0	25.7							
			25.9									
			26.2									
		58	25.3	25.4								
			25.5									
			25.4									
	TGFbeta	1	26.6	26.6	26.0			1.9	0.3	0.8	-0.3	1.0
			26.6									
			26.7									
		58	25.2	25.3								
			25.4									
			25.2									
	TNF	1	33.3	32.9	32.8			8.8	-0.5	1.4	0.5	0.1
32.4												
33.0												
58		31.8	32.8									

	IL1A	1	34.4	35.1	34.6		10.5	0.0	1.0	0.0	0.8		
			32.2										
			35.6										
			34.9										
		34.8											
		33.9											
		35.7											
		27.0											
		26.3											
	24.4	24.5											
	24.5												
	24.6												
	58		24.4	24.5									
		24.5											
		24.6											
	Week 3	Gene	Mouse ID	Tech. Rep.	Ø cT-tech		Ø cT-bio	Ø cT-HK	ΔcT (primer-HK)	ΔΔcT (ir-sham)	Fold change	Log2 fold change	StdV
	sham	B2M	15	22.4	22.3		23.0	24.7					
				22.2									
22.3													
22.0													
22.0													
22.4													
22.3													
22.0													
22.2													
23.8													
24.4													
23.5													
24.6													
24.3													
24.2													
26.4													
26.7													
25.7													
26.1													
26.3													

			26.4					
		28	26.5	26.3				
			26.2					
			26.0					
		29	26.7	26.6				
			26.7					
			26.6					
		45	26.0	26.1				
			26.2					
			26.1					
		59	26.9	26.8				
			26.8					
	26.7							
	TGFbeta	15	26.4	25.9	25.7		1.5	
			25.6					
			25.7					
		24	25.4	25.2				
			25.0					
			25.1					
		25	25.8	26.0				
			25.9					
			26.2					
		28	25.9	25.7				
			25.5					
			25.6					
		29	26.3	26.1				
			26.0					
			26.0					
		45	25.0	25.1				
			25.3					
			25.0					
59		26.0	26.1					
		26.4						
		26.0						
TNF	15	31.8	31.6	32.6		8.4		
		31.6						
		31.3						
	24	32.3	31.9					
		31.5						
		31.9						
	25	31.6	31.6					
		31.8						
		31.5						
28	32.2	31.5						
	31.3							

			31.2				
		29	33.9	35.6			
			39.3				
			33.6				
		45	31.8	31.5			
			31.2				
			31.6				
		59	34.9	34.6			
			Undetermined				
			34.3				
	IL1A	15	33.4	33.1	33.9	9.7	
			32.8				
			33.2				
		24	33.3	33.0			
			32.8				
			32.8				
		25	32.5	33.2			
			33.4				
			33.9				
		28	34.5	34.5			
			33.9				
			35.0				
		29	33.6	33.5			
			33.3				
			Undetermined				
		45	Undetermined	35.6			
			34.3				
			37.0				
		59	34.2	34.3			
			36.2				
			32.7				
	IL1B	15	25.9	26.0	26.0	1.8	
			26.1				
			26.0				
		24	26.3	26.6			
			26.9				
			26.7				
		25	25.7	25.8			
			25.9				
			25.7				
		28	25.8	26.3			
			26.5				
			26.5				
		29	24.9	25.0			
			25.3				
			25.0				

Flash930 33 Gy		45	26.0	25.9					
			26.2						
			25.6						
	59	26.5	26.5						
		26.2							
		26.9							
	B2M	9	21.4	21.5	22.7	24.6			
			21.4						
			21.8						
		21	22.8	23.0					
			23.1						
			22.9						
		23	22.4	21.9					
			21.6						
			21.9						
		41	21.6	21.6					
			21.6						
			21.7						
		47	23.5	23.7					
			23.6						
			24.1						
		49	23.0	23.0					
			23.2						
			22.9						
		61	22.2	22.3					
			22.2						
			22.5						
		63	24.0	24.2					
			23.9						
			24.8						
		GAPDH	9	25.9				25.8	26.5
				25.5					
				25.8					
			21	27.2				27.2	
				27.1					
				27.2					
			23	26.4				26.2	
				26.2					
				25.9					
			41	26.3				25.9	
				25.9					
				25.6					
	47		27.2	27.3					
			27.3						
			27.3						
	49		26.0	26.0					

			26.0							
			25.9							
		61	26.2	26.2						
			26.6							
			25.9							
		63	28.3	27.7						
			27.5							
			27.4							
	TGFbeta	9	25.5	25.7	26.6	26.6	25.2	0.0	-25.2	0.8
			25.5							
			26.1							
		21	27.6	27.2						
			27.2							
			26.8							
		23	26.4	26.4						
			26.3							
			26.4							
		41	25.8	25.9						
			25.8							
			26.1							
		47	27.2	27.4						
			27.4							
			27.6							
		49	26.3	26.3						
			26.3							
			26.3							
		61	26.2	26.1						
			26.0							
			26.2							
		63	28.0	28.1						
			27.9							
			28.3							
	TNF	9	31.9	32.7	33.3	33.3	24.9	0.0	-24.9	1.3
			32.5							
			33.8							
		21	33.0	33.3						
			33.2							
			33.8							
		23	32.1	33.3						
			32.7							
			35.0							
		41	32.5	32.3						
			31.4							
			32.9							
		47	33.7	34.3						

			34.8													
			34.4													
		49	33.0	32.4												
			32.4													
			32.0													
		61	31.4	31.9												
			32.4													
			31.8													
		63	32.9	35.9												
			39.0													
			Undetermined													
		IL1A	9	32.8							32.7	33.9	33.9	24.3	0.0	-24.3
	33.3															
	32.2															
	21		33.4	33.7												
			32.7													
			34.9													
	23		33.7	33.6												
			34.0													
			33.1													
	41		32.6	33.1												
			32.3													
			34.4													
	47		38.3	36.0												
			35.2													
			34.5													
	49		32.7	33.6												
			33.8													
			34.4													
	61		34.8	34.1												
			34.7													
			32.9													
	63		33.0	34.4												
34.8																
35.4																
IL1B	9		25.9	25.8	26.4	26.4	24.7	0.0	-24.7	1.1						
			25.8													
			25.8													
	21	26.9	26.8													
		26.8														
		26.7														
	23	25.3	25.1													
		24.9														
		25.1														
41	25.7	26.0														
	26.3															

		48	25.2	25.1							
			25.3								
			25.0								
		54	26.4	26.4							
			26.3								
			26.6								
		62	25.9	26.1							
			25.9								
			26.5								
	TGFbeta	8	26.0	25.8	25.8		25.8	24.3	0.0	-24.3	0.7
			25.7								
			25.8								
		26	26.6	26.5							
			Undetermined								
			26.4								
		34	25.8	25.8							
			25.9								
			25.7								
		40	24.2	24.4							
			24.4								
			24.5								
		48	25.7	25.5							
			25.4								
			25.3								
		54	26.6	26.5							
			26.8								
			26.2								
		62	26.2	26.2							
			26.0								
			26.4								
	TNF	8	32.5	34.1	32.9		32.9	24.5	0.0	-24.5	1.4
			35.2								
			34.5								
		26	34.4	33.2							
			32.5								
			32.7								
		34	33.5	33.1							
			32.8								
			32.8								
		40	30.4	30.5							
			30.4								
			30.7								
		48	31.9	32.1							
			32.0								
			32.4								

		54	38.1	34.8									
			32.8										
			33.4										
		62	32.7	32.6									
			32.1										
			32.8										
	IL1A	8	33.4	33.1							34.1		
			33.9										
			32.2										
		26	33.6	34.7									
			34.9										
			35.5										
		34	36.2	36.3									
			34.1										
			38.8										
		40	32.6	33.3									
			33.4										
			34.0										
		48	34.8	34.0									
			33.4										
			33.6										
		54	32.8	34.1									
			34.8										
			34.6										
		62	32.9	33.5									
			33.0										
			34.5										
		IL1B	8	25.5								25.4	26.2
				25.4									
				25.4									
			26	27.2								27.5	
				27.7									
				27.5									
34	25.9		26.3										
	26.6												
	26.5												
40	25.4		25.0										
	24.8												
	24.9												
48	25.3		25.3										
	25.3												
	25.2												
54	27.5		27.8										
	27.5												
	28.3												
62	26.2	26.2											

			26.1														
			26.3														
Flash9 33 Gy	B2M	1	19.4	19.3	21.8	23.9											
			19.2														
			19.3														
		10	23.5	23.4													
			23.3														
			23.3														
		58	22.9	22.8													
			22.9														
			22.7														
	GAPDH	1	24.1	23.9	25.9												
			23.9														
			23.8														
		10	26.8	27.1													
			27.2														
			27.4														
		58	26.8	26.7													
			27.2														
			26.2														
	TGFbeta	1	25.2	24.7	26.2		26.2	24.7	0.0	-24.7	1.3						
			24.5														
			24.6														
		10	27.4	27.4													
			27.4														
			27.4														
		58	26.4	26.3													
			26.3														
			26.3														
	TNF	1	30.3	30.9	32.9		32.9	24.5	0.0	-24.5	1.7						
			30.6														
			31.7														
		10	35.2	34.0													
			32.8														
			Undetermined														
		58	32.9	33.7													
			Undetermined														
			34.6														
	IL1A	1	34.3	32.9	34.0		34.0	24.3	0.0	-24.3	1.7						
			31.9														
			32.4														
		10	33.5	33.2													
			33.4														
			32.5														
		58	33.1	35.9													

	IL1B	1	37.9	23.8	26.6		26.6	24.8	0.0	-24.8	2.5		
			36.6										
			23.9										
		23.8											
		23.8											
		27.0											
		27.3											
		28.8											
		28.4											
	Week 4	Gene	Mouse ID	Tech. Rep.	∅ cT-tech	∅ cT-bio	∅ cT-HK	ΔcT (primer-HK)	ΔΔcT (ir-sham)	Fold change	Log2 fold change	StdV	
	sham	B2M	15	23.0	22.5	21.6	23.5						
				22.1									
22.4													
22.0													
21.8													
22.2													
22.2													
21.1													
21.0													
21.8													
21.7													
21.5													
21.0													
20.7													
20.9													
Gapdh			15	25.4	29.6								25.4
				38.4									
				25.0									
		24.9											
		24.5											
		25.2											
		25.1											
		24.0											

			23.6		25.3		1.0	
		29	25.1	25.2				
			25.2					
			25.3					
		45	24.4	24.5				
			24.6					
			24.5					
		59	24.4	24.5				
			24.8					
			24.3					
	TGFbeta	15	25.4	25.6				
			25.7					
			25.6					
		24	24.7	24.6				
			24.6					
			24.5					
		25	25.6	25.5				
			25.2					
			25.5					
		28	25.1	24.6				
			23.9					
			24.9					
		29	25.8	25.8				
			25.8					
			25.7					
		45	25.5	25.5				
			25.7					
			25.5					
		59	25.2	25.2				
			25.3					
			25.3					
	TNF	15	32.4	32.2	31.9	7.7		
			32.3					
			31.8					
		24	30.2	30.5				
			30.4					
			30.8					
		25	31.7	32.3				
			33.2					
			31.9					
		28	31.3	31.0				
			30.6					
			31.1					
		29	32.6	32.3				
			31.9					

			32.4					
		45	31.6	32.6				
			33.6					
			32.7					
		59	Undetermined	32.6				
			33.4					
			31.8					
		IL1A	15	33.6				
	32.5							
	34.3							
	24		33.4	32.8				
			32.6					
			32.2					
	25		34.4	33.4				
			32.9					
			32.9					
	28		31.9	33.1				
			33.0					
			34.5					
	29		33.3	33.9				
			34.3					
			34.1					
	45		33.5	33.2				
			34.0					
			32.0					
	59		38.8	36.5				
			37.8					
			32.9					
	IL1B	15	25.7	25.6	25.5	1.2		
			25.4					
			25.6					
		24	25.0	24.8				
			24.7					
			24.6					
		25	26.3	26.0				
			25.8					
			25.9					
		28	25.4	25.7				
			25.5					
			26.3					
		29	26.7	26.4				
			26.2					
			26.3					
		45	24.6	24.5				
			24.8					
24.1								

		59	25.3	25.1				
			24.9					
			25.1					
Flash930 33 Gy	B2M	9	23.3	22.9	21.9	23.6		
			23.1					
			22.4					
		19	22.5	22.6				
			22.7					
			22.4					
		21	21.0	21.0				
			21.2					
			20.9					
		23	21.5	21.4				
			21.4					
			21.4					
		41	21.8	21.7				
			21.6					
			21.7					
		47	21.3	21.3				
			21.4					
			21.2					
		49	22.2	22.2				
			22.2					
			22.2					
		61	20.9	20.9				
			20.7					
			21.0					
		63	22.8	22.9				
			22.7					
			23.2					
	GAPDH	9	25.6	25.6	25.4			
			25.6					
			25.7					
		19	26.1	26.2				
			26.2					
			26.2					
		21	24.9	24.8				
			24.6					
			24.8					
		23	25.2	25.5				
			25.6					
			25.8					
		41	25.1	25.1				
			25.1					
			25.1					
		47	24.7	24.6				

			24.7		25.3		25.3	24.2	0.0	-24.2	0.6
			24.5								
		49	25.4	25.4							
			25.4								
			25.3								
		61	24.2	24.3							
			24.3								
			24.3								
		63	26.7	26.9							
			26.7								
			27.3								
		TGFbeta	9	25.6							
	25.5										
	25.5										
	19		25.7	25.8							
			25.9								
			25.8								
	21		24.4	24.5							
			24.5								
			24.5								
	23		25.4	25.3							
			25.2								
			25.2								
	41		25.6	25.5							
			25.4								
			25.4								
	47		24.7	24.8							
			24.8								
			24.8								
	49		25.4	25.5							
			25.5								
			25.5								
	61		24.4	24.5							
24.4											
24.6											
63	26.3	26.1									
	26.0										
	26.0										
TNF	9	30.8	31.8	31.8	31.8	24.1	0.0	-24.1	0.8		
		32.8									
		31.9									
	19	32.5	32.9								
		33.6									
		32.6									
	21	31.7	31.6								

			31.5															
			31.6															
		23	31.5	31.9														
			32.0															
			32.3															
		41	32.1	32.2														
			32.9															
			31.5															
		47	30.7	30.6														
			30.7															
			30.5															
		49	30.8	31.9														
			32.4															
			32.4															
		61	30.4	30.7														
			30.4															
			31.4															
		63	32.4	32.7														
			34.3															
			31.5															
		IL1A	9	33.8								33.7	34.4	34.4	24.9	0.0	-24.9	1.4
				32.5														
				34.9														
	19		33.8	35.7														
			33.9															
			39.5															
	21		32.9	33.3														
			33.7															
			33.3															
	23		33.2	33.1														
			33.9															
			32.2															
	41		33.1	32.8														
32.4																		
33.0																		
47	33.2		33.8															
	33.0																	
	35.2																	
49	33.9		34.8															
	32.9																	
	37.6																	
61	Undetermined		36.6															
	37.9																	
	35.3																	
63	36.9	36.2																
	33.5																	

	IL1B	9	38.4	25.9	25.7						
			26.7								
			25.7								
		25.4									
		19	26.9	26.8							
			26.9								
			26.6								
		21	24.8	25.0							
			24.9								
			25.3								
		23	25.4	25.6							
			25.6								
			25.7								
		41	25.2	25.3							
			25.2								
			25.3								
		47	25.5	25.5							
			25.5								
			25.4								
		49	25.6	25.6							
			25.5								
			25.6								
		61	25.4	25.4							
			25.4								
			25.5								
		63	25.7	26.0							
			26.2								
			26.2								
Conv 33 Gy	B2M	26	23.6	23.2	21.9	23.3					
			23.3								
			22.6								
		34	22.3	22.1							
			22.1								
			21.8								
		40	22.2	22.1							
			22.2								
			21.7								
		48	21.0	21.0							
			21.0								
			21.1								
		54	21.8	21.6							
			21.6								
			21.4								
		62	21.6	21.3							
			21.4								
			21.0								

	GAPDH	26	25.1	25.3	24.8						
			25.4								
			25.4								
		34	24.9	25.3							
			25.4								
			25.6								
		40	24.9	24.8							
			24.7								
			24.8								
		48	23.8	23.9							
			24.0								
			23.9								
		54	24.8	24.8							
			24.7								
			24.8								
	62	24.8	24.7								
		24.8									
		24.5									
	TGFbeta	26	26.0	25.6	25.2		1.2	0.2	0.9	-0.2	0.8
			25.5								
			25.2								
		34	26.8	26.5							
			27.0								
			25.6								
		40	25.0	24.9							
			24.8								
			24.9								
		48	23.8	24.2							
			24.2								
			24.7								
54		25.2	25.0								
		24.9									
		25.0									
62	24.9	25.2									
	25.2										
	25.4										
TNF	26	32.0	31.6	31.5		7.5	-0.2	1.2	0.2	0.4	
		31.6									
		31.1									
	34	31.3	31.4								
		31.1									
		31.9									
	40	31.5	31.2								
		31.3									
		30.8									

		48	30.7	30.9																			
			31.0																				
			30.9																				
		54	30.8	31.7																			
			32.9																				
			31.4																				
		62	31.9	32.2																			
			32.3																				
			32.3																				
		IL1A	26	34.7							33.4	33.0	9.0	-0.5	1.4	0.5	0.5						
				32.5																			
				32.9																			
	34		36.4	33.6																			
			31.9																				
			32.5																				
	40		32.2	32.3																			
			32.3																				
			32.5																				
	48		32.3	32.5																			
			32.7																				
			32.5																				
	54		33.6	32.9																			
			32.2																				
			32.9																				
	62		33.0	33.4																			
			34.5																				
			32.9																				
	IL1B		26	26.0							26.0							25.3	1.3	0.1	0.9	-0.1	0.7
				26.1																			
				25.9																			
			34	25.6							26.0												
				26.0																			
				26.4																			
		40	25.7	25.8																			
			25.8																				
			25.8																				
		48	24.6	24.6																			
			24.6																				
			24.6																				
		54	24.7	24.6																			
			24.5																				
			24.5																				
		62	25.1	24.9																			
			25.0																				
			24.5																				

Flash9 33 Gy	B2M	1	21.5	21.6	21.9	23.3					
			21.6								
			21.6								
		10	22.9	22.8							
			22.9								
			22.7								
		58	21.4	21.2							
			21.1								
			21.2								
	GAPDH	1	24.8	24.8	24.8						
			24.6								
			24.9								
		10	25.7	25.7							
			25.6								
			25.7								
		58	23.8	23.8							
			23.9								
			23.9								
	TGFbeta	1	24.7	25.1	25.3	25.3	24.2	0.0	-24.2	1.0	
			25.6								
			24.9								
		10	26.2	26.3							
			27.0								
			25.7								
		58	24.5	24.4							
			24.5								
			24.3								
	TNF	1	31.3	30.8	30.9	30.9	23.2	0.0	-23.2	0.9	
			30.7								
			30.4								
		10	31.6	31.9							
			32.1								
			31.9								
		58	30.2	30.1							
			29.6								
			30.4								
IL1A	1	34.9	33.7	34.2	34.2	24.7	0.0	-24.7	1.4		
		32.3									
		34.0									
	10	36.4	35.7								
		36.4									
		34.5									
	58	33.7	33.1								
		32.8									
		32.7									

	IL1B	1	26.0	26.0	26.4		26.4	25.2	0.0	-25.2	0.3	
			26.2									
			26.0									
		10	26.4	26.5								
			26.5									
			26.6									
		58	26.6	26.6								
			26.6									
			26.6									
	Week FIN	Gene	Mouse ID	Tech. Rep.	Ø cT- tech	Ø cT- bio	Ø cT- HK	ΔcT (primer- HK)	ΔΔcT (ir- sham)	Fold change	Log2 fold change	StdV
	sham	B2M	15	20.5	20.2	21.5	23.5					
				20.1								
19.9												
24			23.2	22.1								
			21.5									
			21.7									
25			21.3	21.2								
			20.8									
			21.4									
28			20.4	20.3								
			20.3									
			20.2									
45			22.6	22.9								
			22.9									
			23.2									
59		22.6	22.4									
		22.3										
		22.2										
Gapdh		15	24.5	24.6	25.5							
			24.5									
			24.7									
		24	26.6	26.5								
			26.3									
			26.5									
		25	25.6	25.6								
			25.6									
			25.7									
		28	23.6	23.8								
			24.6									
			23.4									
	45	26.7	26.2									
		26.4										
		25.7										
59	26.5	26.5										

			26.6					
			26.6					
	TGFbeta	15	24.7	24.7	26.1		1.8	
			24.6					
			24.9					
		24	27.2	27.0				
			27.0					
			26.7					
		25	26.2	26.1				
			25.8					
			26.3					
		28	26.0	25.6				
			25.3					
			25.5					
		45	26.4	26.3				
			26.3					
			26.3					
		59	26.6	26.7				
			26.8					
			26.7					
	TNF	15	32.5	31.6	32.2		8.0	
			31.6					
			30.7					
		24	32.3	32.2				
			31.5					
			32.8					
		25	32.7	32.4				
			31.5					
			33.1					
		28	32.9	31.8				
			31.2					
			31.3					
		45	31.8	31.6				
			31.7					
			31.2					
		59	32.9	33.9				
			33.9					
			34.8					
	IL1A	15	31.0	30.7	31.7		7.4	
			30.8					
			30.3					
		24	33.8	32.5				
			32.4					
			31.5					
		25	30.0	30.7				

Flash930 33 Gy			31.3	30.0	26.2			
			30.7					
			28					29.8
		29.8						
		30.3						
		45	32.6	32.6				
			32.8					
			32.4					
		59	33.8	33.4				
			32.9					
			33.5					
		IL1B	15	25.4				25.3
				25.3				
				25.2				
			24	28.5				28.9
	29.5							
	28.8							
	25		25.0	25.1				
			25.0					
			25.4					
	28		25.2	25.5				
			25.5					
			25.7					
	45		25.9	25.7				
			25.7					
			25.7					
	59		26.9	26.7				
			26.7					
			26.3					
	B2M	9	21.9	21.8				
			21.8					
			21.8					
		19	21.9	22.0				
			22.4					
			21.6					
		21	22.3	22.2				
			22.2					
			22.2					
		23	22.9	22.7				
			22.7					
			22.4					
		41	22.5	22.4				
			22.5					
			22.4					
	47	23.8	23.8					
		24.0						

			23.7								
		49	23.9	23.9							
			23.6								
			24.3								
		61	23.5	23.4							
			23.3								
			23.4								
	GAPDH	9	25.0	24.9	25.3						
			24.9								
			24.9								
		19	25.6	25.4							
			25.3								
			25.2								
		21	24.8	24.7							
			24.7								
			24.7								
		23	25.7	25.9							
			26.2								
			25.9								
		41	24.6	24.6							
			24.4								
			24.9								
		47	26.2	26.1							
			25.9								
			26.2								
		49	25.5	25.5							
			25.8								
			25.1								
		61	25.8	25.5							
			25.6								
			25.1								
	TGFbeta	9	27.1	26.9	27.5	27.5	25.7	0.0	-25.7	0.8	
			26.9								
			26.7								
		19	27.0	26.9							
			27.0								
			26.8								
		21	28.6	28.1							
			27.8								
			27.9								
		23	28.9	28.8							
			28.7								
			28.8								
		41	26.8	27.0							
			26.6								

			27.6								
		47	27.6	27.7							
			28.3								
			27.2								
		49	26.8	26.7							
			26.6								
			26.8								
		61	28.1	28.1							
			28.2								
			28.0								
	TNF	9	35.2	33.2	32.8		32.8	24.8	0.0	-24.8	1.3
			31.9								
			32.6								
		19	32.4	32.6							
			33.2								
			32.2								
		21	32.4	32.3							
			32.1								
			32.4								
		23	32.8	32.6							
			32.8								
			32.4								
		41	31.1	30.8							
			30.4								
			30.8								
		47	34.7	35.4							
			39.3								
			32.3								
		49	33.6	32.9							
			32.7								
			32.6								
		61	31.9	32.6							
			33.0								
			32.9								
	IL1A	9	32.5	33.3	32.8		32.8	25.4	0.0	-25.4	1.1
			34.1								
			33.3								
		19	34.1	33.8							
			33.9								
			33.3								
		21	32.1	32.3							
			31.4								
			33.3								
		23	33.8	34.0							
			33.4								

Conv 33 Gy			35.0		26.6	26.6	24.6	0.0	-24.6	1.4	
		41	30.8	30.8							
			30.6								
			30.9								
		47	33.8	33.6							
			33.5								
			33.6								
		49	33.8	33.0							
			32.6								
			32.8								
		61	31.9	31.8							
			31.6								
			32.0								
		IL1B	9	25.3							25.4
				25.3							
	25.4										
	19		24.9	24.8							
			24.7								
			24.7								
	21		25.5	25.6							
			25.5								
			25.6								
	23		29.0	28.8							
			28.7								
			28.6								
	41		26.6	26.5							
			26.6								
			26.4								
	47		26.8	26.4							
			26.5								
			25.8								
	49		26.3	26.6							
			26.5								
26.9											
61	28.5	28.5									
	28.6										
	28.6										
B2M	8	22.3	22.4	22.2	23.6						
		22.5									
		22.2									
	26	23.6	23.6								
		23.9									
		23.3									
	40	22.3	22.1								
22.0											

[illegible]

			26.6								
	TNF	8	32.3	32.8	32.3		32.3	24.3	0.0	-24.3	0.8
			32.9								
			33.3								
		26	32.3	32.6							
			33.2								
			32.4								
		40	31.6	31.6							
			31.6								
			31.7								
		48	31.6	31.5							
			31.3								
			31.6								
		54	33.8	33.4							
			32.6								
			33.7								
	62	31.3	31.6								
		31.8									
		31.8									
	IL1A	8	31.7	32.8	31.9		31.9	24.5	0.0	-24.5	1.7
			34.1								
			32.6								
		26	33.6	34.0							
			35.0								
			33.4								
		40	33.2	32.6							
			32.0								
			32.6								
		48	31.4	31.2							
			31.3								
30.9											
54		31.5	31.9								
		31.5									
		32.7									
62	29.0	28.9									
	28.9										
	28.7										
IL1B	8	25.5	25.4	25.7	25.7	23.8	0.0	-23.8	0.8		
		25.3									
		25.5									
	26	26.3	26.2								
		26.2									
		26.3									
40	24.4	24.4									
	24.5										

Flash9 33 Gy			24.3																
		48	25.7	25.7															
			25.7																
			25.7																
		54	26.3	26.3															
			26.4																
			26.3																
		62	26.4	26.4															
			26.4																
			26.4																
		B2M	1	22.6	22.8	21.9	23.2												
				22.6															
				23.3															
			10	21.4	21.3														
				21.3															
				21.1															
			58	21.7	21.6														
				21.5															
				21.6															
			GAPDH	1	25.7									25.3	24.6				
					25.0														
					25.1														
10		24.4		24.3															
		24.3																	
		24.2																	
58		23.7		24.2															
		24.5																	
		24.3																	
TGFbeta		1		26.7	26.8	26.2								26.2		24.3	0.0	-24.3	0.8
				26.5															
				27.3															
		10	25.7	25.3															
			25.4																
			24.8																
	58	26.3	26.4																
		26.4																	
		26.4																	
	TNF	1	33.6	33.5	32.4				32.4	24.4	0.0	-24.4	1.0						
			33.9																
			32.8																
10		32.5	32.2																
		32.5																	
		31.7																	
58		31.9	31.4																
		31.6																	

			30.8								
	IL1A	1	32.5	32.3	31.6		31.6	24.2	0.0	-24.2	0.6
			32.2								
			32.2								
		10	31.4	31.3							
			31.1								
			31.4								
		58	30.9	31.3							
			31.7								
			31.2								
	IL1B	1	27.2	27.1	26.1		26.1	24.2	0.0	-24.2	0.8
			26.9								
			27.2								
		10	25.3	25.5							
			25.7								
			25.5								
		58	25.8	25.8							
			25.9								
			25.8								

Table S4: Measurements for the irradiated blood volume estimation. The estimation was performed on trans-illuminated photographs of the mouse ears from three mice directly after irradiation. The letters S and G in the mouse ID indicate that these mice were from a previous study, where the setup and handling of mice were the same (S. Girst et al.: Proton Minibeam Radiation Therapy Reduces Side Effects in an In Vivo Mouse Ear Model, Int J Radiation Oncol Biol Phys, Vol. 95, No. 1, pp. 234e241, 2016, <https://doi.org/10.1016/j.ijrobp.2015.10.020>).

	Static blood volume [μl]	Blood flow volume [μl]			Total irradiated blood volume [μl]		
		Flash930	Flash9	Conv	Flash930	Flash9	Conv
mouse SG24	0.28	0.0022	0.22	34	0.28	0.50	35
mouse SG16	0.12	0.0012	0.13	20	0.12	0.24	20
mouse SG18	0.18	0.0017	0.18	27	0.19	0.36	28
mean:	0.19	0.0017	0.18	27	0.20	0.37	27
Stdev:	0.07	0.0004	0.04	7	0.07	0.11	7