



Table S1. Percent reduction in median DNAI after irradiation relative to reduction at baseline, along with 95% confidence intervals and adjusted p values. # denotes adj p < 0.1.

Mission	Mission day	% Reduction DNAI	95% conf		Adjusted p-value
3	Day 3	9.344	-2.206	19.589	1.00E+00
3	Day 10	16.439	4.764	26.683	1.39E-01
3	Day 17	7.907	0.155	15.057	6.40E-01
3	Day 24	3.638	-5.137	11.680	1.00E+00
3	Day 31	12.029	2.174	20.890	3.20E-01
3	Day 38	6.374	-4.278	15.937	1.00E+00
3	Day 45	14.545	6.151	22.188	2.82E-02 #
3	R+1	10.157	2.303	17.379	2.25E-01
3	R+7	17.605	10.199	24.401	4.35E-04 #
5	Day 3	1.226	-6.120	8.065	1.00E+00
5	Day 10	19.959	14.769	24.833	4.44E-10 #
5	Day 17	18.991	13.834	23.838	1.88E-09 #
5	Day 24	22.882	13.703	31.084	2.68E-04 #
5	Day 31	17.856	11.136	24.067	5.05E-05 #
5	Day 38	0.869	-4.792	6.225	1.00E+00
5	Day 45	2.642	-6.567	11.056	1.00E+00
5	R+1	6.131	-2.321	13.884	1.00E+00
5	R+7	4.132	-5.627	12.989	1.00E+00

Table S2. Change in mean ADRR (DNAI/hr), 95% confidence intervals, and adjusted p-values. # denotes adj p < 0.1.

Mission	Mission day	Δ ADRR	95% conf		Adjusted p-value
1	Day 3	-0.026	-0.104	0.053	1.0000E+00
1	Day 10	0.033	-0.049	0.115	1.0000E+00
1	Day 17	0.017	-0.036	0.070	1.0000E+00
1	Day 24	0.071	0.009	0.133	3.8145E-01
1	Day 38	0.057	0.008	0.107	3.8145E-01
1	Day 45	0.088	0.038	0.137	1.6092E-02 #
1	R+1	0.043	-0.011	0.098	1.0000E+00
1	R+7	0.034	-0.016	0.084	1.0000E+00
2	Day 3	0.020	-0.029	0.068	1.0000E+00
2	Day 10	0.050	0.014	0.086	1.3926E-01
2	Day 17	0.056	0.020	0.091	5.4293E-02 #
3	Day 3	-0.067	-0.188	0.055	1.0000E+00
3	Day 10	-0.106	-0.196	-0.017	3.3523E-01
3	Day 17	-0.017	-0.118	0.084	1.0000E+00
3	Day 24	-0.173	-0.246	-0.100	1.5742E-04 #
3	Day 31	-0.030	-0.134	0.073	1.0000E+00
3	Day 38	-0.048	-0.116	0.020	1.0000E+00
3	Day 45	-0.066	-0.165	0.033	1.0000E+00
3	R+1	-0.152	-0.212	-0.093	2.9080E-05 #
3	R+7	0.012	-0.080	0.103	1.0000E+00
4	Day 3	-0.038	-0.061	-0.015	3.0595E-02 #
4	Day 10	0.001	-0.037	0.038	1.0000E+00
4	Day 17	-0.019	-0.048	0.010	1.0000E+00
4	Day 24	-0.036	-0.073	0.000	6.8533E-01
4	Day 31	-0.035	-0.057	-0.014	3.1416E-02 #
4	Day 38	-0.083	-0.109	-0.058	1.2030E-08 #
4	Day 45	-0.085	-0.142	-0.028	7.2355E-02
4	R+7	-0.033	-0.066	0.000	6.9458E-01
5	Day 3	0.049	0.018	0.080	4.3669E-02 #
5	Day 10	0.106	0.079	0.134	8.8390E-12 #
5	Day 17	0.209	0.171	0.247	2.8000E-24 #
5	Day 24	0.099	0.049	0.148	3.5439E-03 #
5	Day 31	0.086	0.031	0.141	5.0631E-02 #
5	Day 38	0.083	0.034	0.131	2.3134E-02 #
5	Day 45	0.162	0.115	0.209	1.2100E-09 #
5	R+1	0.197	0.161	0.233	3.0690E-24 #
5	R+7	0.022	-0.002	0.045	8.8174E-01

Table S3. Allocation of samples to 7 experimental conditions for a given subject and mission time point as originally planned.

Exp Condition	Radiation	Incubation Time (min)	Replicates
1	pre-irradiation	none	4
2	3.73 Gy	0	4
3	3.73 Gy	10	4
4	3.73 Gy	20	4
5	3.73 Gy	30	4
6	3.73 Gy	40	4
7	3.73 Gy	50	4
			Total = 28