

Supplementary information

Ectoine protects DNA from damage by ionizing radiation

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Supplementary Table S1 | Irradiation of pUC19 in water and in 1 M ectoine solution. Acceleration voltage: 30 kV, irradiation time: 300±4 s. Currents, number of primary electrons are measured, the calculation of irradiation doses is based on Hahn *et. al.*²⁸ (see reference in the main text.) Total error of the currents is less 5%. All samples are analyzed by gel electrophoresis. Samples, which are additionally analyzed with atomic force microscopy, are bold written.

pUC19 in water	current [nA]	number of primary electrons [$\cdot 10^{12}$]	effective irradiation dose [Gy]	pUC19 in 1M ectoine solution	current [nA]	number of primary electrons [$\cdot 10^{12}$]	effective irradiation dose [Gy]
control 1	0	0	0	control 1	0	0	0
control 2	0	0	0	control 2	0	0	0
sample 1	0.107	0.200	0.13	sample 1	0.115	0.216	0.14
sample 2	0.163	0.305	0.20	sample 2	0.210	0.394	0.26
sample 3	0.285	0.534	0.36	sample 3	0.290	0.544	0.36
sample 4	0.365	0.684	0.46	sample 4	0.448	0.84	0.56
sample 5	0.416	0.780	0.52	sample 5	0.542	1.02	0.68
sample 6	0.419	0.786	0.52	sample 6	0.551	1.033	0.69
sample 7	0.503	0.943	0.63	sample 7	0.551	1.033	0.69
sample 8	0.612	1.15	0.76	sample 8	7.52	14.1	9.39
sample 9	0.750	1.41	0.94	sample 9	7.54	14.14	9.41
sample 10	0.849	1.59	1.06	sample 10	8.05	15.09	10.05
sample 11	1.02	1.91	1.27	sample 11	9.27	17.38	11.57
sample 12	3.10	5.81	3.87	sample 12	9.37	17.57	11.7

sample 13	4.47	8.38	5.58	sample 13	11.21	21.02	13.99
sample 14	6.22	11.67	7.76	sample 14	11.23	21.06	14.02
sample 15	7.35	13.78	9.17	sample 15	12.50	23.44	15.6
sample 16	10.65	19.97	13.29	sample 16	12.52	23.48	15.63
sample 17	11.28	21.14	14.07	sample 17	12.68	23.78	15.83