In Vitro Investigations on the Antioxidant Effects of Vitamin D in a Panel of Cancer Cell Lines

Supplementary Data

- Table S1. Effect of vitamin D treatment on reactive oxygen species (ROS) generation, measured as H_2O_2 levels in a panel of cancer cell lines (mean of relative luminescence units (RLU) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	1450 ± 53.50	1346 ± 63.00	1264 ± 42.50	1048 ± 83.50
MDA-MB-231	415 ± 67.55	294.6 ± 53.81	325 ± 28.00	304.5 ± 8.500
HT-29	766.8 ± 45.25	764.3 ± 43.75	753.8 ± 5.008	568 ± 22.00
HCT-116	830.5 ± 49.50	517 ± 67.00	513 ± 39.00	398.8 ± 28.40
Detroit-562	328.5 ± 4.500	283 ± 11.00	258.5 ± 10.50	254.7 ± 2.517
FaDu	1210 ± 44.50	944.5 ± 25.50	1055 ± 18.00	929.7 ± 23.75

- Table S2. Effect of vitamin D treatment on protein carbonyl (PC) levels in a panel of cancer cell lines (mean (nmol/mg protein) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	2.079 ± 0.5483	3.241 ± 0.1131	2.020 ± 0.3555	2.324 ± 0.3249
MDA-MB-231	15.03 ± 1.528	2.741 ± 0.8426	2.697 ± 1.4440	0.8576 ± 0.0189
HT-29	1.164 ± 0.01013	2.251 ± 1.025	1.189 ± 0.3151	2.354 ± 0.4950
HCT-116	1.765 ± 0.3292	1.867 ± 0.03963	2.055 ± 0.2284	1.133 ± 0.4155
Detroit-562	8.191 ± 3.378	4.443 ± 1.340	2.534 ± 1.032	2.267 ± 0.8258
FaDu	14.50 ± 3.197	13.88 ± 3.537	15.62 ± 0.05773	9.773 ± 0.01745

- Table S3. Effect of vitamin D treatment on thiobarbituric acid reactive substances (TBARS) levels in a panel of cancer cell lines (mean (nmol/mg protein) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	15.29 ± 2.087	10.48 ± 2.087	6.679 ± 2.087	1.588 ± 0.9004
MDA-MB-231	11.24 ± 0.01013	10.34 ± 0.4628	2.998 ± 0.2182	4.810 ± 0.3936
HT-29	43.8 ± 4.011	27.59 ± 10.55	23.6 ± 6.111	9.984 ± 1.547
HCT-116	7.837 ± 0.9550	7.851 ± 0.4145	5.368 ± 0.9415	5.429 ± 0.3510
Detroit-562	2.584 ± 0.3346	1.505 ± 0.4456	0.7921 ± 0.0122	0.7000 ± 0.1000
FaDu	0.7763 ± 0.1604	0.8477 ± 0.1000	0.2894 ± 0.0416	0.2956 ± 0.0063

- Table S4. Effect of vitamin D treatment on oxidative DNA damage, assessed by 8-hydroxy-2′-deoxyguanosine (8-OHdG) levels, in a panel of cancer cell lines (mean (ng/mL) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	3.366 ± 0.05550	2.955 ± 0.04763	2.833 ± 0.03972	2.689 ± 0.03700
MDA-MB-231	17.5 ± 0.7563	10.38 ± 0.4455	11.57 ± 0.4760	6.341 ± 0.4760
HT-29	16.68 ± 0.4606	18.07 ± 0.5313	11.9 ± 0.7789	7.110 ± 1.954
HCT-116	5.226 ± 0.5858	5.299 ± 0.5733	4.524 ± 0.5359	3.710 ± 0.4814
Detroit-562	19.26 ± 0.6135	18.91 ± 0.7030	12.81 ± 0.7070	9.128 ± 0.8055
FaDu	14.05 ± 1.578	13.07 ± 1.578	10.28 ± 0.1550	7.470 ± 2.494

- Table S5. Effect of vitamin D treatment on xanthine oxidase (XOD) levels in a panel of cancer cell lines (mean (pg/mL) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	180.6 ± 9.027	156.2 ± 25.24	137.7 ± 8.603	151.6 ± 3.456
MDA-MB-231	177.6 ± 6.015	168.6 ± 21.01	153.6 ± 17.96	157.6 ± 8.655
HT-29	277.0 ± 8.757	256.4 ± 26.25	207.5 ± 0.6658	300.7 ± 8.685
HCT-116	172.3 ± 9.215	178.2 ± 1.155	141.1 ± 21.59	144.9 ± 32.64
Detroit-562	251.3 ± 1.000	314.7 ± 15.44	262.5 ± 6.116	183.4 ± 36.21
FaDu	202.9 ± 1.002	120.5 ± 18.74	130.8 ± 9.627	129.7 ± 5.162

- Table S6. Effect of vitamin D treatment on superoxide dismutase (SOD) protein levels in a panel of cancer cell lines (mean (units/mL) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	0.2553 ± 0.0963	0.4145 ± 0.1967	0.8343 ± 0.1955	0.7338 ± 0.1089
MDA-MB-231	0.6756 ± 0.0076	0.6756 ± 0.0076	0.7548 ± 0.1299	0.7692 ± 0.1841
HT-29	0.3284 ± 0.0086	0.3047 ± 0.0365	0.4787 ± 0.0237	0.4350 ± 0.0113
HCT-116	0.2483 ± 0.0790	0.4888 ± 0.0440	0.4190 ± 0.0373	0.4373 ± 0.0556
Detroit-562	0.4927 ± 0.0104	0.5196 ± 0.0056	0.5798 ± 0.0182	0.6461 ± 0.0072
FaDu	0.2240 ± 0.0629	0.3211 ± 0.0662	0.3581 ± 0.0799	0.4207 ± 0.0515

- Table S7. Effect of vitamin D treatment on superoxide dismutase (SOD) enzymatic activity in a panel of cancer cell lines (mean (units/mL) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	2.553 ± 0.9634	4.145 ± 1.967	8.343 ± 1.1955	7.338 ± 1.089
MDA-MB-231	6.756 ± 0.07608	6.756 ± 0.07608	7.981 ± 0.7500	7.692 ± 1.841
HT-29	3.274 ± 0.08424	3.087 ± 0.3654	4.401 ± 0.2371	4.337 ± 0.1108
HCT-116	2.488 ± 0.7902	4.888 ± 0.4398	4.190 ± 0.3734	4.373 ± 0.5562
Detroit-562	4.927 ± 0.1047	5.196 ± 0.05555	5.616 ± 0.1820	6.461 ± 0.07194
FaDu	2.240 ± 0.6298	3.211 ± 0.6621	3.581 ± 0.7996	4.207 ± 0.5147

- Table S8. Effect of vitamin D treatment on catalase (CAT) activity in a panel of cancer cell lines (mean (mU/mg protein) ± standard deviation).

Cell type	Control cells	1 nM	10 nM	100 nM
MCF-7	6.688 ± 0.02945	6.236 ± 0.3854	6.851 ± 0.02179	6.861 ± 0.02292
MDA-MB-231	1.149 ± 0.3423	0.4605 ± 0.0199	2.391 ± 0.06044	7.305 ± 0.3320
HT-29	1.068 ± 0.00808	1.037 ± 0.02603	1.091 ± 0.03371	1.075 ± 0.01551
HCT-116	0.2208 ± 0.01204	1.159 ± 0.04579	0.9912 ± 0.006951	0.4921 ± 0.0031
Detroit-562	0.6275 ± 0.08658	0.6849 ± 0.02774	0.6623 ± 0.008067	0.6766 ± 0.02240
FaDu	0.8049 ± 0.05112	0.4708 ± 0.09862	0.8039 ± 0.04562	1.267± 0.01912