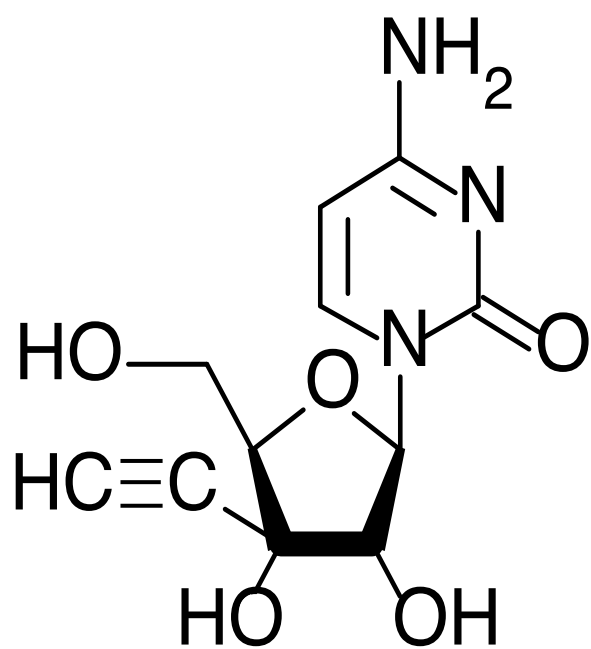




Title	A Nucleoside Anticancer Drug, 1-(3-C-Ethynyl-β-D-Ribo-Pentofuranosyl)Cytosine, Induces Depth-Dependent Enhancement of Tumor Cell Death in Spread-Out Bragg Peak (SOBP) of Proton Beam
Author(s)	Maeda, Kenichiro; Yasui, Hironobu; Yamamori, Tohru; Matsuura, Taeko; Takao, Seishin; Suzuki, Motofumi; Matsuda, Akira; Inanami, Osamu; Shirato, Hiroki
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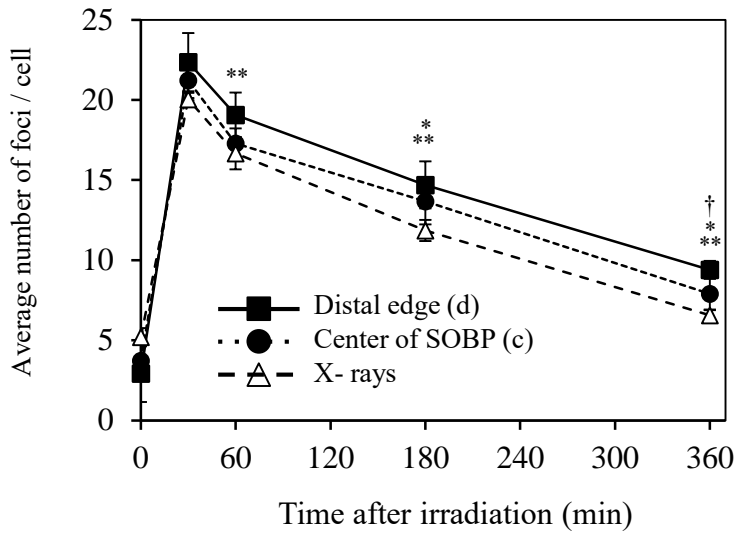


Supplementary Table 1. Summary of RBE₁₀, RBE_{2Gy} and RBE_{4Gy} values

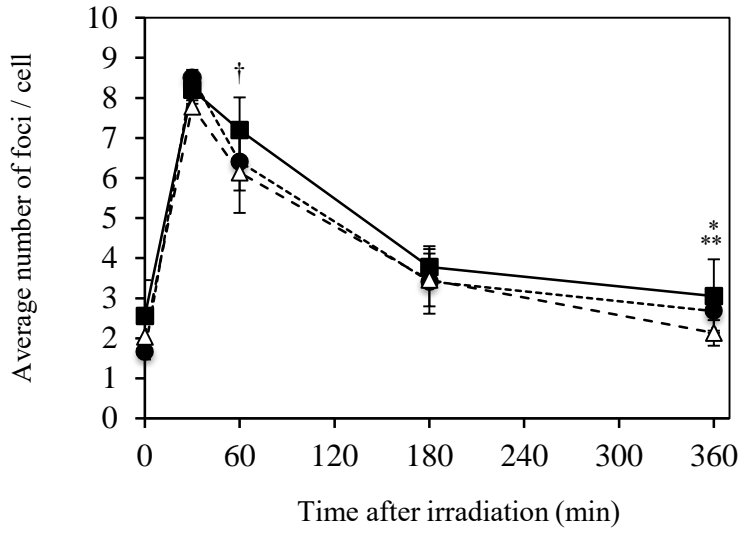
Cell line	Position	Depth (mm)	LET _d (keV/μm)	ECyd	D ₁₀ (Gy)	RBE ₁₀	SER	D _{4Gy} (Gy)	RBE _{4Gy}	SER _{4Gy}	D _{2Gy} (Gy)	RBE _{2Gy}	SER _{2Gy}
A549	a	5	0.857	-	6.414 ± 0.197	1.068 ± 0.051	1.209	4.087 ± 0.212	0.981 ± 0.052	1.293	2.300 ± 0.200	0.874 ± 0.077	1.418
				+	5.304 ± 0.531	1.299 ± 0.125		3.161 ± 0.453	1.282 ± 0.173		1.622 ± 0.325	1.264 ± 0.232	
	b	165	2.847	-	6.436 ± 0.181	1.065 ± 0.030	1.215	4.035 ± 0.092	0.992 ± 0.022	1.280	2.215 ± 0.098	0.904 ± 0.040	1.365
				+	5.296 ± 0.987	1.327 ± 0.277		3.153 ± 0.744	1.325 ± 0.360		1.623 ± 0.481	1.323 ± 0.460	
	c	190	3.695	-	6.021 ± 0.332	1.132 ± 0.062	1.157	3.763 ± 0.221	1.065 ± 0.065	1.239	2.059 ± 0.190	0.977 ± 0.093	1.360
				+	5.204 ± 0.230	1.316 ± 0.029		3.036 ± 0.127	1.319 ± 0.055		1.514 ± 0.105	1.326 ± 0.091	
	d	220	9.457	-	4.372 ± 0.206	1.568 ± 0.073	1.038	2.359 ± 0.255	1.709 ± 0.180	1.049	1.092 ± 0.176	1.863 ± 0.290	1.061
				+	4.211 ± 0.822	1.656 ± 0.257		2.249 ± 0.501	1.836 ± 0.392		1.029 ± 0.285	2.040 ± 0.527	
V79	a	5	0.857	-	8.439 ± 0.348	1.034 ± 0.046	1.167	3.836 ± 0.135	1.044 ± 0.036	1.225	1.904 ± 0.060	1.051 ± 0.033	1.290
				+	7.233 ± 0.567	1.211 ± 0.092		3.131 ± 0.230	1.282 ± 0.092		1.476 ± 0.102	1.359 ± 0.092	
	b	165	2.847	-	7.939 ± 0.671	1.102 ± 0.093	1.068	3.652 ± 0.307	1.100 ± 0.093	1.223	1.831 ± 0.155	1.098 ± 0.095	1.353
				+	7.433 ± 0.172	1.172 ± 0.031		2.987 ± 0.088	1.340 ± 0.040		1.353 ± 0.056	1.480 ± 0.061	
	c	190	3.695	-	6.947 ± 0.112	1.254 ± 0.020	1.157	2.928 ± 0.043	1.366 ± 0.020	1.340	1.348 ± 0.056	1.486 ± 0.060	1.440
				+	6.003 ± 0.419	1.456 ± 0.127		2.229 ± 0.161	1.801 ± 0.123		0.936 ± 0.077	2.146 ± 0.176	
	d	220	9.457	-	6.263 ± 0.170	1.392 ± 0.073	1.038	2.352 ± 0.103	1.702 ± 0.073	1.040	0.993 ± 0.053	2.017 ± 0.108	1.037
				+	6.031 ± 0.152	1.445 ± 0.165		2.262 ± 0.202	1.778 ± 0.165		0.958 ± 0.122	2.111 ± 0.281	

RBE₁₀, RBE_{4Gy} and RBE_{2Gy} were calculated as the ratio of 10% survival fraction (D₁₀) and isosurviving fraction at 4 Gy (D_{4Gy}) and 2 Gy (D_{2Gy}) to that of 250 kV X-rays, respectively. D_{10s} of X-rays were 6.8 Gy and 8.71 Gy for A549 cells and V79 cells, respectively.

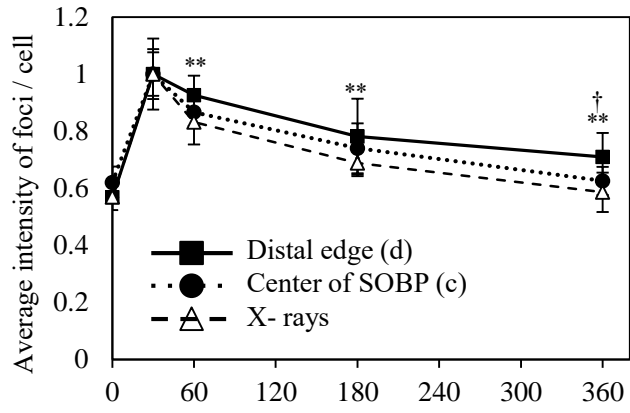
(A) A549



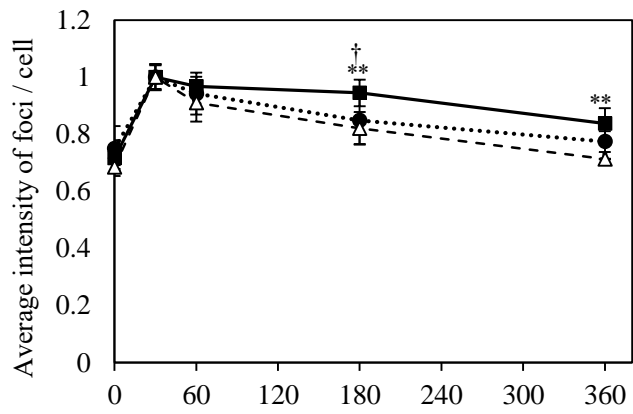
(B) V79



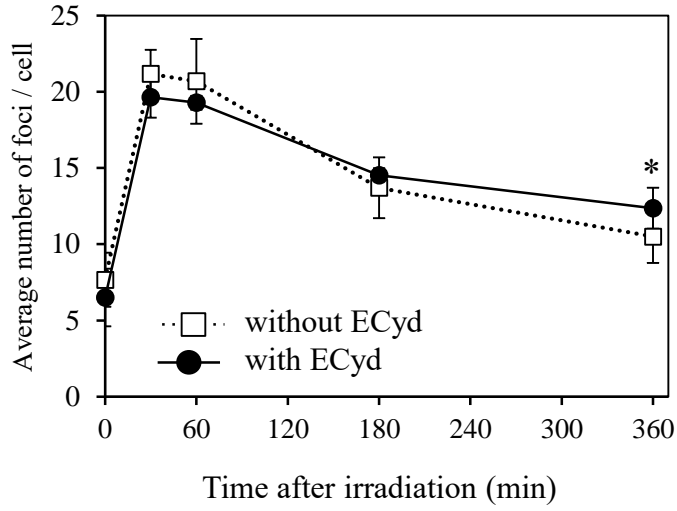
(A) A549



(B) V79



The center (c) of SOBP



The distal edge (d) of SOBP

