[20] 4,4'-DIOCTYLDIPHENYLAMINE (101-67-7) M.W.: 393.72

CHL cells

S9 mix	Treatment time (h) [a]	Dose (μg/ml)	Total cells	Polyploid (%)	Frequency of aberrant cells (%) [b]							Evaluation	
					ctg	ctb	cte	frg	csb	cse	total	Each	Overall
–	24-0	Ethanol	100	0.0	1.0	1.0	1.0	0.0	0.0	0.0	3.0		
		125.0	100	0.0	0.0	1.0	0.0	0.0	0.0	1.0	2.0	–	
		250.0	100	2.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	–	–
		500.0	100	1.0	1.0	1.0	1.0	0.0	0.0	0.0	3.0	–	
–	48-0	Ethanol	100	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0		
		125.0	100	1.0	0.0	1.0	0.0	0.0	0.0	1.0	2.0	–	
		250.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–
		500.0	100	0.0	2.0	0.0	0.0	0.0	0.0	1.0	3.0	–	
–	6-18	Ethanol	100	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		125.0	100	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	–	
		250.0	100	0.0	1.0	0.0	2.0	0.0	0.0	0.0	3.0	–	–
		500.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	
+	6-18	Ethanol	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		125.0	100	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	–	
		250.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–
		500.0	100	0.0	1.0	0.0	1.0	0.0	0.0	0.0	2.0	–	

CHO cells

S9 mix	Treatment time (h) [c]	Dose (μg/ml)	Total cells	Simple aber.		Complex aber.		Total aber.		Evaluation	
				No./cell	% cells	No./cell	% cells	No./cell	% cells	Each	Overall
–	8-2.5	Acetone	200	0.03	2.5	0.01	0.5	0.03	3.0		
		445.0	200	0.05	3.5	0.01	1.0	0.06	4.0	–	
		1340.0	200	0.03	2.5	0.01	1.0	0.04	3.5	–	–
		4450.0	200	0.03	2.5	0.01	1.0	0.04	3.5	–	
+	2-10	Acetone	200	0.02	1.5	0.01	1.0	0.03	2.0		
		445.0	200	0.01	0.5	0.01	0.5	0.01	1.0	–	
		1340.0	200	0.00	0.0	0.00	0.0	0.00	0.0	–	–
		4450.0	200	0.00	0.0	0.00	0.0	0.00	0.0	–	

[21] *N*-NITROSODIPHENYLAMINE (86-30-6) M.W.: 198.24

CHL cells

S9 mix	Treatment time (h) [a]	Dose (μg/ml)	Total cells	Polyploid (%)	Frequency of aberrant cells (%) [b]							Evaluation	
					ctg	ctb	cte	frg	csb	cse	total	Each	Overall
–	24-0	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		15.6	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	
		31.3	100	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	–	–
		62.5	100	1.0	1.0	1.0	0.0	0.0	0.0	0.0	2.0	–	
–	48-0	DMSO	100	2.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0		
		15.6	100	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	
		31.3	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–
		62.5	100	1.0	0.0	4.0	0.0	0.0	0.0	0.0	4.0	–	
–	6-18	DMSO	100	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		31.3	100	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	–	
		62.5	100	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	–	–
		125.0	0									TOX	
+	6-18	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		31.3	100	0.0	2.0	3.0	5.0	0.0	0.0	0.0	9.0	±	
		62.5	100	1.0	2.0	3.0	15.0	0.0	0.0	0.0	19.0	+	+
		125.0	100	0.0	6.0	1.0	16.0	0.0	0.0	0.0	21.0	+	

CHO cells

S9 mix	Treatment time (h) [c]	Dose (μg/ml)	Total cells	Simple aber.		Complex aber.		Total aber.		Evaluation	
				No./cell	% cells	No./cell	% cells	No./cell	% cells	Each	Overall
–	8-2.5	DMSO	200	0.01	0.5	0.00	0.0	0.01	0.5		
		8.8	200	0.01	0.5	0.01	0.5	0.01	1.0	–	
		26.2	200	0.02	1.5	0.01	1.0	0.03	2.5	–	
		43.8	200	0.01	0.5	0.00	0.0	0.01	0.5	–	–
		87.5	100	0.02	2.0	0.00	0.0	0.02	2.0	–	
		131.0	0							TOX	
+	2-10	DMSO	200	0.04	3.5	0.01	0.5	0.04	4.0		
		153.0	200	0.03	2.5	0.03	2.5	0.06	4.0	–	
		382.0	81	0.04	3.7	0.00	0.0	0.04	3.7	–	
		1020.0	200	0.02	1.5	0.02	1.5	0.03	2.5	–	–
		1530.0	200	0.02	2.0	0.00	0.0	0.02	2.0	–	

[22] TRIS(2,3-EPOXYPROPYL)ISOCYANURATE (2451-62-9) M.W.: 297.27

CHL cells

S9 mix	Treatment time (h) [a]	Dose (μg/ml)	Total cells	Polyploid (%)	Frequency of aberrant cells (%) [b]							Evaluation	
					ctg	ctb	cte	frg	csb	cse	total	Each	Overall
–	24-0	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		1.2	100	0.0	8.0	26.0	63.0	0.0	0.0	0.0	74.0	+	
		2.5	100	2.0	17.0	43.0	89.0	0.0	0.0	0.0	94.0	+	+
		5.0	100	0.0	11.0	66.0	84.0	7.0	0.0	0.0	100.0	+	
–	48-0	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		1.2	100	2.0	9.0	45.0	86.0	1.0	0.0	3.0	92.0	+	
		2.5	0									TOX	+
		5.0	0									TOX	
–	6-18	DMSO	100	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0		
		1.2	100	0.0	8.0	8.0	41.0	0.0	0.0	0.0	48.0	+	
		2.5	100	0.0	8.0	11.0	54.0	0.0	0.0	0.0	61.0	+	+
		5.0	100	1.0	14.0	18.0	78.0	0.0	0.0	0.0	82.0	+	
+	6-18	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		1.2	100	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	–	
		2.5	100	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	–	–
		5.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	

CHO cells

S9 mix	Treatment time (h) [c]	Dose (μg/ml)	Total cells	Simple aber.		Complex aber.		Total aber.		Evaluation	
				No./cell	% cells	No./cell	% cells	No./cell	% cells	Each	Overall
–	8-2.5	DMSO	200	0.02	2.0	0.00	0.0	0.02	2.0		
		3.0	50	0.14	14.0	0.18	18.0	0.34	30.0	+	
		10.0	50	0.92	54.0	0.48	34.0	1.40	72.0	+	
		30.0	15	1.93	67.0	0.47	33.0	3.73	87.0	+	+
		50.0	0							TOX	
+	2-10	DMSO	200	0.02	2.0	0.02	1.5	0.04	3.0		
		10.0	200	0.16	13.5	0.05	4.5	0.20	18.0	+	
		30.0	50	0.58	38.0	0.56	34.0	1.34	62.0	+	+
		100.0	20	1.05	40.0	0.85	40.0	5.90	85.0	+	

[23] TRIALLYL ISOCYANURATE (1025-15-6) M.W.: 249.27

CHL cells

S9 mix	Treatment time (h) [a]	Dose (μg/ml)	Total cells	Polyploid (%)	Frequency of aberrant cells (%) [b]							Evaluation	
					ctg	ctb	cte	frg	csb	cse	total	Each	Overall
–	24-0	DMSO	100	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0		
		500.0	100	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	–	
		750.0	100	1.0	3.0	2.0	0.0	0.0	0.0	0.0	5.0	±	±
		1000.0	100	0.0	4.0	2.0	0.0	0.0	0.0	1.0	7.0	±	
–	48-0	DMSO	100	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		500.0	100	3.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	–	
		750.0	100	2.0	4.0	2.0	2.0	0.0	0.0	2.0	9.0	±	±
		1000.0	0									TOX	
–	6-18	DMSO	100	2.0	0.0	1.0	1.0	0.0	0.0	0.0	2.0		
		250.0	100	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	–	
		500.0	100	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–
		1000.0	100	1.0	1.0	0.0	0.0	0.0	1.0	0.0	2.0	–	
+	6-18	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		250.0	100	4.0	13.0	17.0	25.0	2.0	0.0	0.0	32.0	+	
		500.0	100	2.0	6.0	16.0	22.0	3.0	0.0	0.0	30.0	+	+
		1000.0	100	4.0	7.0	16.0	25.0	4.0	1.0	0.0	37.0	+	

CHO cells

S9 mix	Treatment time (h) [c]	Dose (μg/ml)	Total cells	Simple aber.		Complex aber.		Total aber.		Evaluation	
				No./cell	% cells	No./cell	% cells	No./cell	% cells	Each	Overall
–	8-2.5	DMSO	200	0.00	0.0	0.00	0.0	0.00	0.0		
		146.0	200	0.00	0.0	0.00	0.0	0.00	0.0	–	
		485.0	200	0.01	0.5	0.00	0.0	0.01	0.5	–	–
		1460.0	200	0.00	0.0	0.01	0.5	0.01	0.5	–	
+	2-10	DMSO	200	0.05	4.0	0.00	0.0	0.05	4.0		
		291.0	200	0.02	1.5	0.00	0.0	0.02	2.0	–	
		970.0	200	0.02	1.5	0.01	0.5	0.03	2.5	–	–
		2910.0	200	0.04	3.0	0.01	0.5	0.04	3.5	–	

[24] CHROMIUM CARBONYL (13007-92-6) M.W.: 220.07

CHL cells

S9 mix	Treatment time (h) [a]	Dose (μg/ml)	Total cells	Polyploid (%)	Frequency of aberrant cells (%) [b]							Evaluation	
					ctg	ctb	cte	frg	csb	cse	total	Each	Overall
–	24-0	CMC	100	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0		
		2000.0	100	1.0	2.0	1.0	0.0	0.0	0.0	1.0	4.0	–	
		4000.0	100	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	–	–
		8000.0	100	1.0	0.0	1.0	0.0	0.0	0.0	0.0	1.0	–	
–	48-0	CMC	100	1.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0		
		2000.0	100	0.0	1.0	3.0	0.0	0.0	0.0	0.0	4.0	–	
		4000.0	100	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	–	–
		8000.0	100	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	–	
–	6-18	CMC	100	0.0	2.0	0.0	1.0	0.0	0.0	0.0	3.0		
		500.0	100	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	–	
		1000.0	100	0.0	0.0	1.0	1.0	0.0	0.0	0.0	2.0	–	–
		2000.0	100	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	–	
+	6-18	CMC	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		500.0	100	0.0	2.0	1.0	1.0	0.0	0.0	0.0	4.0	–	
		1000.0	100	0.0	5.0	2.0	2.0	0.0	0.0	0.0	9.0	±	+w
		2000.0	100	0.0	9.0	8.0	20.0	0.0	0.0	0.0	27.0	+	

CHO cells

S9 mix	Treatment time (h) [c]	Dose (μg/ml)	Total cells	Simple aber.		Complex aber.		Total aber.		Evaluation	
				No./cell	% cells	No./cell	% cells	No./cell	% cells	Each	Overall
–	8-2.5	Medium	100	0.00	0.0	0.00	0.0	0.00	0.0		
		Acetone	100	0.03	2.0	0.00	0.0	0.03	2.0		
		75.0	100	0.00	0.0	0.00	0.0	0.00	0.0	–	
		100.0	100	0.02	2.0	0.00	0.0	0.02	2.0	–	–
		128.0	100	0.00	0.0	0.00	0.0	0.00	0.0	–	
+	2-10.5	Medium	100	0.00	0.0	0.00	0.0	0.00	0.0		
		Acetone	100	0.02	2.0	0.00	0.0	0.02	2.0		
		75.0	100	0.01	1.0	0.00	0.0	0.01	1.0	–	
		100.0	100	0.02	2.0	0.01	1.0	0.03	2.0	–	–
		128.0	100	0.07	5.0	0.00	0.0	0.07	5.0	–	

[25] 1-(1,2-DIBROMOETHYL)-3,4-DIBROMOCYCLOHEXANE (3322-93-8) M.W.: 427.83

CHL cells

S9 mix	Treatment time (h) [a]	Dose (μg/ml)	Total cells	Polyploid (%)	Frequency of aberrant cells (%) [b]							Evaluation	
					ctg	ctb	cte	frg	csb	cse	total	Each	Overall
−	24-0	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		30.0	100	0.0	1.0	1.0	0.0	0.0	0.0	0.0	2.0	−	
		60.0	100	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−	−
		120.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−	
−	48-0	DMSO	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		30.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−	
		60.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	−	−
		120.0	100	0.0	0.0	1.0	1.0	0.0	0.0	0.0	2.0	−	
−	6-18	DMSO	100	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
		62.5	100	0.0	2.0	1.0	0.0	0.0	0.0	0.0	3.0	−	
		125.0	100	0.0	2.0	0.0	1.0	0.0	0.0	0.0	3.0	−	−
		250.0	100	0.0	0.0	1.0	1.0	0.0	0.0	0.0	2.0	−	
+	6-18	DMSO	100	1.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0		
		62.5	100	0.0	1.0	2.0	2.0	0.0	0.0	0.0	5.0	±	
		125.0	100	0.0	6.0	10.0	10.0	0.0	0.0	0.0	18.0	+	+
		250.0	87	0.0	5.7	19.5	19.5	0.0	0.0	0.0	29.9	+	

CHO cells

S9 mix	Treatment time (h) [c]	Dose (μg/ml)	Total cells	Simple aber.		Complex aber.		Total aber.		Evaluation	
				No./cell	% cells	No./cell	% cells	No./cell	% cells	Each	Overall
−	8-2.5	DMSO	100	0.02	2.0	0.00	0.0	0.02	2.0		
		10.0	100	0.00	0.0	0.00	0.0	0.00	0.0	−	
		30.0	100	0.01	1.0	0.01	1.0	0.02	2.0	−	−
		100.0	100	0.01	1.0	0.00	0.0	0.01	1.0	−	
+	2-10	DMSO	100	0.00	0.0	0.00	0.0	0.00	0.0		
		30.0	100	0.01	1.0	0.00	0.0	0.01	1.0	−	
		100.0	100	0.00	0.0	0.00	0.0	0.00	0.0	−	−
		150.0	100	0.00	0.0	0.00	0.0	0.00	0.0	−	
		300.0	100	0.01	1.0	0.00	0.0	0.01	1.0	−	

[a] Treatment time-recovery time.

[b] ctg, chromatid gaps (including chromosome gaps); ctb, chromatid breaks; cte, chromatid exchanges; frg, fragmentation; csb, chromosome breaks; cse, chromosome exchanges such as dicentric or ring chromosomes.

[c] Treatment time-harvest time.

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