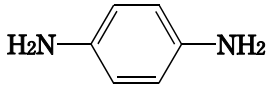
p-Phenylenediamine
【*p*-ﾌｪﾆﾚﾝｼﾞｱﾐﾝ】

Chemical Name; *p*-Phenylenediamine
Synonym ; *p*-Diaminobenzene
1,4-Diaminobenzene
1,4-Benzenediamine
p-ｼﾞｱﾐﾉﾍﾞﾝｾﾞﾝ
1,4-ｼﾞｱﾐﾉﾍﾞﾝｾﾞﾝ
1,4-ﾍﾞﾝｾﾞﾝｼﾞｱﾐﾝ

Molecular Weight ; 108.14
Melting Point ; 147 ℃ [CHCD]
143 - 145 ℃ [Aldrich]
145 - 147 ℃ [Merck]
Boiling Point ; 267 ℃ [CHCD,Aldrich,Merck]
Flashing Point ; — ℃
Molecular Formula; $C_6H_8N_2$

Chemical Structure



CAS No. ; 106-50-3
MITI No. ; (3)-185
ML No. ; —
Specified Chemical Substances; —

Source of Substance; Tokyo Kasei Kogyo Co.,Ltd.
Lot No. ; FBX02
Purity ; > 99 %

Vehicle ; DMSO

Judgement for
Chromosomal Aberration in CHL ; **Positive**

IARC Evaluation ; not yet cited

Exprimental Data without Metabolic Activation

Treatment						Cell with Structural Chromosome Aberration (%)							
Substance	Time (h)	Concent-ration (mg/ml)	No. of Metaphase	Polyploid (%)	**Judge-ment**		Chromatid		Chromosome		Total		**Judge-ment**
						Gap	CTB	CTE	CSB	CSE	−G	+G	
DMSO	24		200	1.5	−	0.0	0.5	1.0	0.0	0.0	1.5	1.5	−
	48		200	0.5	−	0.5	0.0	0.0	0.0	0.0	0.0	0.5	−
Test Chemical	24	0.00020	200	0.0	−	0.5	1.5	0.5	0.0	0.0	2.0	2.5	−
		0.00051	200	0.5	−	0.5	2.0	4.5	0.0	0.0	6.5	7.0	±
		0.0013	200	0.5	−	3.0	8.5	13.5	0.0	0.0	20.5	22.0	+
		0.0032	200	1.0	−	2.0	6.5	21.0	0.0	0.0	25.0	26.0	+
		0.0080	158	0.6	−	8.2	24.7	55.7	0.0	0.0	65.8	65.8	+
	48	0.00020	200	0.5	−	0.0	0.5	0.5	0.0	0.0	1.0	1.0	−
		0.00051	200	1.0	−	1.0	3.0	4.5	0.0	0.5	6.0	6.0	±
		0.0013	200	1.0	−	0.5	2.0	9.5	0.0	0.0	10.5	10.5	+
		0.0032	200	1.0	−	1.5	2.5	12.5	0.0	0.0	13.5	14.5	+
		0.0080	200	2.0	−	4.0	10.0	53.5	0.0	0.0	54.5	54.5	+
Positive Control [MMC]	24	0.00004	200	1.5	−	3.5	10.5	45.5	0.0	0.0	50.0	51.0	+
	48	0.00004	200	0.5	−	5.0	15.5	74.5	0.0	0.0	79.5	79.5	+

※ There was no observation for metaphase with both treatment of 24Hr and 48Hr at 0.020mg/ml.

Exprimental Data with Metabolic Activation

Treatment			No. of Metaphase	Polyploid (%)	Judge-ment	Cell with Structural Chromosome Aberration (%)							
Substance	S9 mix	Concent-ration (mg/ml)					Chromatid		Chromosome		Total		Judge-ment
						Gap	CTB	CTE	CSB	CSE	−G	+G	
DMSO	−		200	2.0	−	0.0	1.0	1.0	0.0	0.0	2.0	2.0	−
	+		200	1.0	−	0.0	0.0	0.5	0.0	0.0	0.5	0.5	−
Test Chemical	−	0.013	200	1.5	−	0.0	3.0	13.5	0.0	0.5	15.0	15.0	+
		0.025	200	2.5	−	0.5	1.0	7.5	0.0	0.5	9.0	9.0	±
		0.05	183	1.1	−	1.6	2.7	14.8	0.0	1.1	18.0	18.0	+
		0.1				No observation for metaphase							
		0.2				No observation for metaphase							
	+	0.013	200	0.5	−	0.0	1.0	3.0	0.0	0.0	3.0	3.0	−
		0.025	200	1.0	−	0.5	0.5	10.0	0.0	0.0	10.0	10.0	+
		0.05	200	0.5	−	1.0	1.5	8.0	0.0	0.0	9.0	9.0	±
		0.1	200	1.0	−	0.5	2.5	7.5	0.0	0.0	9.5	9.5	±
		0.2	148	0.7	−	2.0	3.4	16.2	0.0	0.0	16.9	16.9	+
Positive Control [CYP]	−	0.01	200	2.5	−	0.0	0.0	2.0	0.0	0.0	2.0	2.0	−
	+	0.01	200	0.0	−	0.0	6.5	68.5	0.0	0.0	70.5	70.5	+

※ There was no observation for metaphase with both treatment of -S9 and +S9 at 0.3mg/ml.