Chemical Name ; Ethyl bromoacetate

Synonym ; Ethyl 2-bromoacetate
Bromoacetic acid ethyl ester
2-ブロモ酢酸エチル
エチルブロモアセタート

Molecular Weight ; 167.00
Melting Point ; −
Boiling Point ; 159℃[Aldrich]
Flashing Point ; 48℃[Aldrich]
Molecular Formula ; $C_4H_7BrO_2$

Chemical Structure

$BrCH_2COOC_2H_5$

CAS No. ; 105-36-2
MITI No. ; (2)-2636
ML No. ; −
Specified Chemical Substances ; −

Source of Substance; Tokyo Kasei Kogyo Co., Ltd.
Lot No. ; FGC01
Purity ; 98.4%

Vehicle ; DMSO

Mutagenicity in Bacterial Test ; Positive

IARC Evaluation ; not yet cited

Conc. μg/plate	Number of Revertants/plate									
	Base-substitution						Frame-shift			
	TA100		TA1535		WP2*uvr*A		TA98		TA1537	
	S9−	S9+	S9−	S9+	S9−	S9+	S9−	S9+	S9−	S9+
DMSO	(129)	(126)	(7)	(11)	(20)	(26)	(11)	(22)	(6)	(13)
	124	134	5	10	14	22	9	25	8	9
	108	160	6	7	18	26	15	22	8	14
1 .22	(116)	(147)	(6)	(9)	(16)	(24)	(12)	(24)	(8)	(12)
	138	119	3	8	26	28	15	21	9	9
	145	146	6	8	21	26	10	28	9	3
4 .88	(142)	(133)	(5)	(8)	(24)	(27)	(13)	(25)	(9)	(6)
	126	155	2	5	25	22	15	30	6	10
	130	121	7	5	21	17	10	24	8	6
19 .5	(128)	(138)	(5)	(5)	(23)	(20)	(13)	(27)	(7)	(8)
	0 *	148	0 *	8	0 *	31	0 *	20	0 *	7
	0 *	178	0 *	8	0 *	25	0 *	21	0 *	8
78 .1	(0 *)	(163)	(0 *)	(8)	(0 *)	(28)	(0 *)	(21)	(0 *)	(8)
	0 *	206	0 *	0	0 *	18	0 *	21	0 *	3
	0 *	227	0 *	0	0 *	39	0 *	15	0 *	7
313	(0 *)	(217)	(0 *)	(0)	(0 *)	(29)	(0 *)	(18)	(0 *)	(5)
	0 *	0 *	0 *	0 *	0 *	31 *	0 *	0 *	0 *	0 *
	0 *	0 *	0 *	0 *	0 *	33 *	0 *	0 *	0 *	0 *
1250	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(32 *)	(0 *)	(0 *)	(0 *)	(0 *)
	0 *	0 *	0 *	0 *	0 *	0 *	0 *	0 *	0 *	0 *
	0 *	0 *	0 *	0 *	0 *	0 *	0 *	0 *	0 *	0 *
5000	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)
Judgement	−	−	−	−	−	−	−	−	−	−
Specific Mutagenicity										
Positive Control	AF-2 (648)	2-AA (1220)	NaN_3 (242)	2-AA (204)	AF-2 (240)	2-AA (1052)	AF-2 (510)	2-AA (392)	9-AA (757)	2-AA (152)

* Growth inhibitation was observed.

Conc. μg/plate	Number of Revertants/plate									
	Base-substitution						Frame-shift			
	TA100		TA1535		WP2*uvr*A		TA98		TA1537	
	S9−	S9+	S9−	S9+	S9−	S9+	S9−	S9+	S9−	S9+
DMSO	(132)	(117)	(7)	(7)	(14)	(29)	(11)	(20)	(7)	(9)
	160		2		18		10		5	
	120		3		16		9		5	
2 .44	(140)		(3)		(17)		(10)		(5)	
	113		6		14		17		3	
	139		8		22		13		6	
4 .22	(126)		(7)		(18)		(15)		(5)	
	124		3	8	21		14		8	
	115		3	5	31		7		9	
9 .77	(120)		(3)	(7)	(26)		(11)		(9)	
	138		2	5	26		20		3	
	139		5	10	23		11		7	
19 .5	(139)		(4)	(8)	(25)		(16)		(5)	
	113 *	150	7 *	7	23	22	5 *	13	3 *	11
	120 *	144	7 *	10	25	26	5 *	13	1 *	11
39 .1	(117 *)	(147)	(7 *)	(9)	(24)	(24)	(5 *)	(13)	(2 *)	(11)
	0 *	155	0 *	6	0 *	18	0 *	20	0 *	5
	0 *	146	0 *	8	0 *	22	0 *	16	0 *	6
78 .1	(0 *)	(151)	(0 *)	(7)	(0 *)	(20)	(0 *)	(18)	(0 *)	(6)
		157		8		34		13		10
		171		5		31		15		6
156		(164)		(7)		(33)		(14)		(8)
		223		0 *		40		17		8
		219		0 *		24		29		8
313		(221)		(0 *)		(32)		(23)		(8)
		43 *				18		14 *		6
		10 *				36		18 *		5
625		(27 *)				(27)		(16 *)		(6)
		0 *				23 *		0 *		0 *
		0 *				28 *		0 *		0 *
1250		(0 *)				(26 *)		(0 *)		(0 *)
Judgement	−	−	−	−	−	−	−	−	−	−
Specific Mutagenicity										
Positive Control	AF-2 (617)	2-AA (1098)	NaN_3 (343)	2-AA (214)	AF-2 (257)	2-AA (956)	AF-2 (387)	2-AA (381)	9-AA (613)	2-AA (156)

Experimental Data-3

Conc. μg/plate	Number of Revertants/plate				
	Base-substitution			Frame-shift	
	TA100	TA1535	WP2*uvr*A	TA98	TA1537
	S9−	S9−	S9−	S9−	S9−
DMSO	(143)	(7)	(14)	(14)	(5)
1 .22	153 141 (147)	3 6 (5)		10 14 (12)	8 2 (5)
2 .44	136 152 (144)	5 5 (5)	8 10 (9)	22 16 (19)	5 3 (4)
4 .22	156 153 (155)	7 5 (6)	16 23 (20)	15 13 (14)	3 2 (3)
9 .77	185 167 (176)	6 4 (5)	13 13 (13)	13 13 (13)	5 6 (6)
19 .5	148 151 (150)	3 * 3 * (3 *)	26 24 (25)	14 * 18 * (16 *)	8 9 (9)
39 .1	143 * 158 * (151 *)	5 * 3 * (4 *)	24 25 (25)	7 * 7 * (7 *)	0 * 2 * (1 *)
78 .1			2 * 7 * (5 *)		
Judgement	−	−	−	−	−
Specific Mutagenicity					
Positive Control	AF-2 (587)	NaN_3 (268)	AF-2 (208)	AF-2 (462)	9-AA (623)

Experimental Data-4

Conc. μg/plate	Number of Revertants/plate					
	Base-substitution					
	TA102		TA104		WP2*uvr*A/pKM101	
	S9−	S9+	S9−	S9+	S9−	S9+
DMSO	(209)	(323)	(266)	(390)	(51)	(82)
	209	310	258	329	55	76
	228	338	219	322	67	84
0 .0763	(219)	(324)	(239)	(326)	(61)	(80)
	186	340	245	314	59	91
	188	330	247	340	62	81
0 .305	(187)	(335)	(246)	(327)	(61)	(86)
	230	328	256	359	41	72
	172	305	232	364	48	77
1 .22	(201)	(317)	(244)	(362)	(45)	(75)
	205	343	281	341	44	86
	202	341	241	377	56	79
4 .88	(204)	(342)	(261)	(359)	(50)	(83)
	160	364	310	405	52	81
	162	318	319	385	48	62
19 .5	(161)	(341)	(315)	(395)	(50)	(72)
	119	423	0 *	930	0 *	100
	124	406	0 *	947	0 *	109
78 .1	(122)	(415)	(0 *)	(939)	(0 *)	(105)
	0 *	441	0 *	2673	0 *	211
	0 *	405	0 *	2601	0 *	253
313	(0 *)	(423)	(0 *)	(2637)	(0 *)	(232)
	0 *	0 *	0 *	0 *	0 *	216 *
	0 *	0 *	0 *	0 *	0 *	214 *
1250	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(215 *)
	0 *	0 *	0 *	0 *	0 *	0 *
	0 *	0 *	0 *	0 *	0 *	0 *
5000	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)	(0 *)
Judgement	−	−	−	+	−	+
Specific Mutagenicity				7180		479
Positive Control	BLM (498)	2-AA (1087)	PA (1581)	2-AA (1262)	AF-2 (1262)	2-AA (1052)

Experimental Data-5 (B9614-4/4)

Conc. μg/plate	Number of Revertants/plate					
	Base-substitution					
	TA102		TA104		WP2*uvr*A/pKM101	
	S9−	S9+	S9−	S9+	S9−	S9+
DMSO	(261)	(308)	(283)	(387)	(55)	(87)
			261		46	
			290		68	
2 .44			(276)		(57)	
	262		310		55	
	236		312		49	
4 .88	(249)		(311)		(52)	
	219		353		69	
	233		297		52	
9 .77	(226)		(325)		(61)	
	261		355		77	
	223		397		60	
19 .5	(242)		(376)		(69)	
	223	312	213 *	772	22 *	104
	222	366	273 *	674	29 *	107
39 .1	(223)	(339)	(243 *)	(723)	(26 *)	(106)
	259 *	328	0 *	1086	0 *	123
	213 *	354	0 *	1122	0 *	138
78 .1	(236 *)	(341)	(0 *)	(1104)	(0 *)	(131)
	0 *	382		1629		185
	0 *	342		1666		177
156	(0 *)	(362)		(1648)		(181)
	0 *	344		2449		314
	0 *	178		2803		303
313	(0 *)	(261)		(2626)		(309)
		223		1210 *		517
		219		1823 *		512
625		(221)		(1517 *)		(515)
		0 *		0 *		31 *
		0 *		0 *		31 *
1250		(0 *)		(0 *)		(31 *)
Judgement	−	−	−	+	−	+
Specific Mutagenicity				9180		709
Positive Control	BLM (752)	2-AA (1204)	PA (1296)	2-AA (1132)	AF-2 (1191)	2-AA (770)