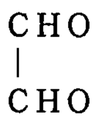
Glyoxal (グリオキサール)

Chemical Name: Glyoxal
Synonym: 1,2-Ethanedione
Ethanedial
Diformyl
Glyoxalaldehyde
Molecular weight: 58.04
Melting point: 15℃
Boiling point: 51℃
Chemical Structure



CAS No : 107-22-2
MITI No : (2)-509, (2)-510
Source of Substance:Tokyo Kasei Kogyo Co.Ltd
Lot.No. : AY01
Purity: 40 % (in water)
Vehicle: H_2O

Mutagenicity
in Bacterial Test: Positive

IARC Evaluation: not yet cited

Experimental Data

Number of Revertants/plate

Con. μg/plate	Base-substitution						Frame-shift			
	TA100		TA1535		WP2uvrA		TA98		TA1537	
	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+
H_2O	(158)	(166)	(7)	(8)	(24)	(26)	(23)	(23)	(6)	(8)
	192	185	3	7	18	28	20	22	7	7
	177	209	8	8	22	27	25	20	6	7
7.81	(185)	(197)	(6)	(8)	(20)	(28)	(23)	(21)	(7)	(7)
	213	221	13	15	24	23	22	22	6	13
	208	227	10	10	23	34	13	20	7	15
15.6	(211)	(224)	(12)	(13)	(24)	(29)	(18)	(21)	(7)	(14)
	332	255	7	9	27	42	23	23	3	9
	298	281	8	13	22	39	16	23	6	9
31.3	(315)	(268)	(8)	(11)	(25)	(41)	(20)	(23)	(5)	(9)
	492	436	10	20	25	32	24	28	7	10
	423	415	13	18	22	37	25	21	6	12
62.5	(458)	(426)	(12)	(19)	(24)	(35)	(25)	(25)	(7)	(11)
	562	716	10	14	51	73	61	24	7	8
	551	726	10	13	50	65	43	39	6	9
125	(557)	(721)	(10)	(14)	(51)	(69)	(52)	(32)	(7)	(9)
	596*	853*	8*	12*	71	105	46*	42	16*	13
	495*	822*	8*	14*	62	99	35*	43	13*	16
250	(546*)	(838*)	(8*)	(13*)	(67)	(102)	(41*)	(43)	(15*)	(15)
	298*	325*	10*	12*	39*	106*	6*	47*	5*	13*
	262*	289*	9*	10*	43*	105*	1*	40*	1*	12*
500	(280*)	(307*)	(10*)	(11*)	(41*)	(106*)	(4*)	(44*)	(3*)	(13*)
	113*	418*	7*	16*	30*	38*	0*	9*	0*	8*
	224*	409*	5*	15*	39*	29*	0*	15*	0*	14*
1000	(169*)	(414*)	(6*)	(16*)	(35*)	(34*)	(0*)	(12*)	(0*)	(11*)
Judgement	+	+	−	+	+	+	+	−	+	−
Specific Mutagenicity	4800	4440		176	216	344	232		36.0	
Positive Control	AF2 (667)	2AA (835)	NaN_3 (241)	2AA (208)	AF2 (223)	2AA 20 (1111)	AF2 (373)	2AA (413)	9AA (437)	2AA (149)

Experimental Data

Con. μg/plate	Number of Revertants/plate									
	Base-substitution						Frame-shift			
	TA100		TA1535		WP2uvrA		TA98		TA1537	
	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+	S9-	S9+
H_2O	(178)	(186)	(7)	(8)	(28)	(29)	(28)	(28)	(8)	(10)
	190	197	5	7	21	25	31	30	5	10
	183	193	10	10	20	32	23	20	3	9
10	(187)	(195)	(8)	(9)	(21)	(29)	(27)	(25)	(4)	(10)
	251	217	6	13	27	31	25	27	6	9
	297	228	6	12	27	32	29	30	10	12
20	(274)	(223)	(6)	(13)	(27)	(32)	(27)	(29)	(8)	(11)
	414	318	10	15	30	40	31	37	10	7
	466	329	8	16	25	34	35	25	7	9
40	(440)	(324)	(9)	(16)	(28)	(37)	(33)	(31)	(9)	(8)
	704	420	10	20	24	45	31	30	6	10
	644	497	10	16	29	44	38	32	10	12
60	(674)	(459)	(10)	(18)	(27)	(45)	(35)	(31)	(8)	(11)
	773	579	9	21	25	59	50	34	6	10
	803	570	12	16	29	47	36	29	7	9
80	(788)	(575)	(11)	(19)	(27)	(53)	(43)	(32)	(7)	(10)
	1073	637	12	12	44	53	51	37	8	10
	935	633	13	13	32	45	50	38	9	9
100	(1004)	(635)	(12)	(13)	(38)	(49)	(51)	(38)	(9)	(10)
	1222	807	9	10	53	69	64	46	9	10
	1257	860	12	20	40	81	67	44	12	9
125	(1240)	(834)	(11)	(15)	(47)	(75)	(66)	(45)	(11)	(10)
	1383*	1090	15	13	90	108	75*	59	15*	20
	1133*	1098	16	16	72	101	55*	84	15*	12
250	(1258*)	(1094*)	(16)	(15)	(81)	(105)	(65*)	(72)	(15*)	(16)
	488*	437*	9*	12*	44*	113	0*	92*	0*	18*
	378*	415*	14*	12*	34*	129	0*	58*	0*	14*
500	(433*)	(426*)	(12*)	(12*)	(39*)	(121)	(0*)	(75*)	(0*)	(16*)
	0*	341*	0*	13*	0*	46*	0*	0*	0*	16*
	0*	339*	0*	13*	0*	37*	0*	0*	0*	7*
1000	0*)	(340*)	(0*)	(13*)	(0*)	(42*)	(0*)	(0*)	(0*)	(12*)
Judgement	+	+	+	+	+	+	+	+	−	−
Specific Mutagenicity	8500	5180	36.0	167	212	368	304	176		
Positive Control	AF2 (729)	2AA (727)	NaN_3 (289)	2AA (184)	AF2 (208)	2AA 20 (1262)	AF2 (363)	2AA (394)	9AA (660)	2AA (131)