

Table 2-13 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Detailed clinical signs : open field observation (Week 1)

Parameter	Sex	Male				Female			
	Dose (mg/kg)	0	100	300	1000	0	100	300	1000
	No. of animals	12	6	6	12	12	6	6	12
Arousal									
Normal		12	6	6	12	12	6	6	12
Convulsion									
None		12	6	6	12	12	6	6	12
Abnormal behavior									
None		12	6	6	12	12	6	6	12
Stereotypy									
None		12	6	6	12	12	6	6	12
Gait									
Normal		12	6	6	12	12	6	6	12
Posture									
Normal		12	6	6	12	12	6	6	12
Grooming									
None		12	6	6	12	12	6	6	12
Rearing count (Mean±S.D.)		5± 1	4± 2	5± 2	5± 3	8± 3	9± 4	6± 1	6± 2
Defecation count (Mean±S.D.)		0± 1	1± 1	0± 1	1± 1	0± 0	0± 0	0± 0	0± 0
Urination									
None		11	4	6	9	12	6	6	11
Small amount		1	1	0	3	0	0	0	1
Moderate amount		0	1	0	0	0	0	0	0

No significant difference in any treated groups from control group.

Table 2-14 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Detailed clinical signs : open field observation (Week 2)

Parameter	Sex	Male				Female			
	Dose (mg/kg)	0	100	300	1000	0	100	300	1000
	No. of animals	12	6	6	12	12	6	6	12
Arousal									
Normal		12	6	6	12	12	6	6	12
Convulsion									
None		12	6	6	12	12	6	6	12
Abnormal behavior									
None		12	6	6	12	12	6	6	12
Stereotypy									
None		12	6	6	12	12	6	6	12
Gait									
No/minimal location		0	0	0	0	0	0	0	1
Normal		12	6	6	12	12	6	6	11
Posture									
Normal		12	6	6	12	12	6	6	12
Grooming									
None		12	6	6	12	12	6	6	12
Rearing count (Mean±S.D.)		4± 2	3± 1	4± 3	5± 3	8± 2	8± 4	6± 2	7± 4
Defecation count (Mean±S.D.)		0± 1	0± 1	1± 1	1± 1	0± 0	0± 0	0± 0	0± 0
Urination									
None		10	6	5	9	12	6	6	11
Small amount		2	0	1	3	0	0	0	1

No significant difference in any treated groups from control group.

Table 2-15 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Detailed clinical signs : open field observation (Week 3)

Parameter	Sex Dose (mg/kg) No. of animals	Male				Female			
		0	100	300	1000	0	100	300	1000
		12	6	6	12	12	6	6	12
Arousal									
Normal		12	6	6	12	12	6	6	12
Convulsion									
None		12	6	6	12	12	6	6	12
Abnormal behavior							a)		
None		12	6	6	12	12	5	6	12
Minor		0	0	0	0	0	1	0	0
Stereotypy									
None		12	6	6	12	12	6	6	12
Gait									
No/minimal location		1	1	0	1	0	0	0	0
Normal		11	5	6	11	12	6	6	12
Posture									
Normal		12	6	6	12	12	6	6	12
Grooming									
None		12	6	6	12	12	6	6	12
Rearing count (Mean+S.D.)		4± 2	2± 1	6± 3	5± 3	9± 1	9± 4	7± 3	7± 3
Defecation count (Mean+S.D.)		0± 1	0± 0	0± 0	0± 1	0± 0	0± 0	0± 0	0± 0
Urination									
None		9	4	4	10	11	6	6	12
Small amount		2	2	1	0	1	0	0	0
Moderate amount		1	0	1	2	0	0	0	0

a): Running
No significant difference in any treated groups from control group.

Table 2-16 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Detailed clinical signs : open field observation (Week 4)

Parameter	Sex Dose (mg/kg) No. of animals	Male				Female			
		0	100	300	1000	0	100	300	1000
Arousal		12	6	6	12	12	6	6	12
Normal		12	6	6	12	12	6	6	12
Convulsion		12	6	6	12	12	6	6	12
None		12	6	6	12	12	6	6	12
Abnormal behavior						a)			
None		12	6	6	12	11	6	6	12
Minor		0	0	0	0	1	0	0	0
Stereotypy		12	6	6	12	12	6	6	12
None		12	6	6	12	12	6	6	12
Gait									
No/minimal location		0	1	0	0	0	0	0	1
Normal		12	5	6	12	12	6	6	11
Posture		12	6	6	12	12	6	6	12
Normal		12	6	6	12	12	6	6	12
Grooming		12	6	6	12	12	6	6	12
None		12	6	6	12	12	6	6	12
Rearing count (Mean+S.D.)		5± 3	3± 2	5± 2	5± 2	9± 2	8± 3	8± 2	7± 4
Defecation count (Mean+S.D.)		0± 0	0± 1	0± 0	0± 1	0± 0	0± 0	0± 0	0± 0
Urination									
None		9	4	6	10	12	6	6	12
Small amount		2	2	0	2	0	0	0	0
Moderate amount		1	0	0	0	0	0	0	0

a): Running
No significant difference in any treated groups from control group.

Table 2-17 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Detailed clinical signs : open field observation (Week 1 of recovery)

Parameter	Sex	Male		Female	
	Dose (mg/kg)	0	1000	0	1000
	No. of animals	6	6	6	6
Arousal					
Normal		6	6	6	6
Convulsion					
None		6	6	6	6
Abnormal behavior					
None		6	6	6	6
Stereotypy					
None		6	6	6	6
Gait					
No/minimal location		1	0	0	0
Normal		5	6	6	6
Posture					
Normal		6	6	6	6
Grooming					
None		6	6	6	6
Rearing count (Mean±S.D.)		5± 3	5± 1	8± 2	6± 2*T
Defecation count (Mean±S.D.)		0± 0	0± 0	0± 0	0± 0
Urination					
None		6	5	5	6
Small amount		0	1	1	0

* : p<0.05 (Significant difference from control group)
T : Student's t-test

Table 2-18 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Detailed clinical signs : open field observation (Week 2 of recovery)

Parameter	Sex	Male		Female	
	Dose (mg/kg)	0	1000	0	1000
	No. of animals	6	6	6	6
Arousal					
Normal		6	6	6	6
Convulsion					
None		6	6	6	6
Abnormal behavior					
None		6	6	6	6
Stereotypy					
None		6	6	6	6
Gait					
No/minimal location		1	0	0	0
Normal		5	6	6	6
Posture					
Normal		6	6	6	6
Grooming					
None		6	6	6	6
Rearing count (Mean±S.D.)		5± 3	4± 2	10± 2	9± 2
Defecation count (Mean±S.D.)		0± 0	0± 0	0± 0	0± 0
Urination					
None		5	6	6	6
Small amount		1	0	0	0

No significant difference between treated group and control group.

Table 2-19 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Manipulative test (Week 4)

Parameter	Sex	Male				Female			
	Dose (mg/kg)	0	100	300	1000	0	100	300	1000
	No. of animals	12	6	6	12	12	6	6	12
Auditory response									
Weak		0	0	0	2	0	0	2	1
Normal		12	6	6	10	12	6	4	11
Approach response									
Normal		12	6	6	12	12	6	6	12
Touch response									
Normal		12	6	6	12	12	6	6	12
Tail pinch response									
Normal		11	6	6	12	10	6	6	12
Exaggerate		1	0	0	0	2	0	0	0
Pupillary reflex									
Pass, both		12	6	6	12	12	6	6	12
Aerial righting reflex (Total score: Mean±S.D.)		0± 0	0± 0	0± 0	0± 0	0± 0	0± 0	0± 0	0± 0
Landing foot splay (mm: Mean±S.D.)		78±11	68±13	72±18	91±10*D	59±19	47±15	63±19	79± 5*DT

* : p<0.05 (Significant difference from control group)

D : Dunnett's test

DT : Dunnett-type rank test

Table 2-20 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Manipulative test (Week 2 of recovery)

Parameter	Sex	Male		Female	
	Dose (mg/kg)	0	1000	0	1000
	No. of animals	6	6	6	6
Auditory response Normal		6	6	6	6
Approach response Normal		6	6	6	6
Touch response Normal		6	6	6	6
Tail pinch response Normal		6	6	6	6
Pupillary reflex Pass, both		6	6	6	6
Aerial righting reflex (Total score: Mean±S.D.)		0± 0	0± 0	0± 0	0± 0
Landing foot splay (mm: Mean±S.D.)		89±23	81±16	60±16	64±14

No significant difference between treated group and control group.

Table 2-21 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Grip strength (Week 4)

Sex	Dose mg/kg		Fore limb g	Hind limb g
Male	0	No.	12	12
		Mean	1062	494
		S.D.	169	77
	100	No.	6	6
		Mean	951	435
		S.D.	158	94
	300	No.	6	6
		Mean	992	494
		S.D.	62	79
	1000	No.	12	12
		Mean	978	456
		S.D.	108	85
Female	0	No.	12	12
		Mean	871	453
		S.D.	100	87
	100	No.	6	6
		Mean	830	453
		S.D.	123	46
	300	No.	6	6
		Mean	779	356
		S.D.	148	100
	1000	No.	12	12
		Mean	796	371
		S.D.	176	127

No significant difference in any treated groups from control group.

Table 2-22 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
Grip strength (Week 2 of recovery)

Sex	Dose mg/kg		Fore limb g	Hind limb g
Male	0	No.	6	6
		Mean	1262	546
		S.D.	111	96
	1000	No.	6	6
		Mean	1092	571
		S.D.	235	86
Female	0	No.	6	6
		Mean	1074	560
		S.D.	126	112
	1000	No.	6	6
		Mean	903	408*
		S.D.	143	28AT

* : $p < 0.05$ (Significant difference from control group)
AT : Aspin-Welch t-test

Table 2-23

A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks

Motor activity (Week 4)

Sex	Dose mg/kg		Interval (minutes)						Total(0-60)
			0-10	10-20	20-30	30-40	40-50	50-60	
Male	0	No.	12	12	12	12	12	12	12
		Mean	407	382	319	339	289	256	1992
		S.D.	31	62	61	75	124	147	334
	100	No.	6	6	6	6	6	6	6
		Mean	427	390	327	341	317	250	2051
		S.D.	44	54	68	45	64	142	273
	300	No.	6	6	6	6	6	6	6
		Mean	422	385	387	312	275	175	1956
		S.D.	48	73	67	42	124	168	309
	1000	No.	12	12	12	12	12	12	12
		Mean	388	327	163**	126**	101**	49**	1154**
		S.D.	45	71	147D	141DT	118D	89D	408D
Female	0	No.	12	12	12	12	12	12	12
		Mean	418	355	320	234	249	247	1823
		S.D.	38	52	84	103	140	154	387
	100	No.	6	6	6	6	6	6	6
		Mean	413	318	273	276	137	114	1531
		S.D.	37	87	57	97	90	103	249
	300	No.	6	6	6	6	6	6	6
		Mean	401	340	229	238	154	121	1483
		S.D.	25	104	148	180	134	124	512
	1000	No.	12	12	12	12	12	12	12
		Mean	383	263	105**	72**	24**	20**	867**
		S.D.	59	125	98D	121D	42DT	40DT	265D

** : p<0.01 (Significant difference from control group)

D : Dunnett's test

DT : Dunnett-type rank test

Table 2-24 A 28-day oral toxicity study of paracetaldehyde in rats with a recovery period of 2 weeks
 Motor activity (Week 2 of recovery)

Sex	Dose mg/kg		Interval (minutes)						Total(0-60)
			0-10	10-20	20-30	30-40	40-50	50-60	
Male	0	No.	6	6	6	6	6	6	6
		Mean	397	349	315	227	218	221	1726
		S.D.	31	58	63	74	73	111	265
	1000	No.	6	6	6	6	6	6	6
		Mean	408	372	280	276	274	208	1819
		S.D.	27	46	63	51	139	125	256
Female	0	No.	6	6	6	6	6	6	6
		Mean	392	277	197	241	242	225	1573
		S.D.	19	74	150	147	206	122	528
	1000	No.	6	6	6	6	6	6	6
		Mean	378	292	247	286	258	209	1670
		S.D.	39	58	140	79	125	132	288

No significant difference between treated group and control group.