

Table 4 General signs of dams during lactation in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	mg/kg	Number of dams and general signs	Days of lactation													
			0		1		2		3		4		5		6	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Control	0	Number of dams	11	11	11	11	11	11	11	11	11	11	11	11	11	11
		Normal	11	11	11	11	11	11	11	11	11	11	11	11	11	11
bumetizole	62.5	Number of dams	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		Normal	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	250	Number of dams	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		Normal	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	1000	Number of dams	11	11	11	11	11	11	11	11	11	11	11	11	11	11
		Normal	11	11	11	11	11	11	11	11	11	11	11	11	11	11

Pre: Before administration, Post: after administration.

Table 5-1 General signs of female rats (recovery group) in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	mg/kg	Number of females and general signs	Days of administration																			
			1		2		3		4		5		6		7		8		9		10	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Control	0	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
bumetizole	250	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	1000	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Pre: Before administration, Post: after administration.

Table 5-2 General signs of female rats (recovery group) in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	mg/kg	Number of females and general signs	Days of administration																									
			14		15		16		17		18		19		20		21		22		23		24		25		26	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post		
Control	0	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
bumetizole	250	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	1000	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Pre: Before administration, Post: after administration.

Table 5-3 General signs of female rats (recovery group) in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	mg/kg	Number of females and general signs	Days of administration																									
			27		28		29		30		31		32		33		34		35		36		37		38		39	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post				
Control	0	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
bumetizole	250	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
	1000	Number of females	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
		Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

Pre: Before administration, Post: after administration.

Table 5-4 General signs of female rats (recovery group) in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	mg/kg	Number of females and general signs	Days of administration					
			40		41		42	
			Pre	Post	Pre	Post	Pre	Post
Control	0	Number of females	6	6	6	6	6	6
		Normal	6	6	6	6	6	6
bumetizole	250	Number of females	6	6	6	6	6	6
		Normal	6	6	6	6	6	6
	1000	Number of females	6	6	6	6	6	6
		Normal	6	6	6	6	6	6

Pre: Before administration, Post: after administration.

Table 5-5 General signs of female rats (recovery group) in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	mg/kg	Number of females and general signs	Days of recovery														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Control	0	Number of females Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
bumetizole	250	Number of females Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	1000	Number of females Normal	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Table 6 Body weights of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of males	12	12	12	12	
Days of administration					
1	381 ± 12	380 ± 11	381 ± 12	380 ± 13	
4	395 ± 14	392 ± 12	389 ± 13	389 ± 12	
8	409 ± 20	404 ± 14	401 ± 14	404 ± 13	
11	419 ± 20	415 ± 18	410 ± 15	415 ± 15	
15	429 ± 22	425 ± 17	420 ± 18	422 ± 16	
18	434 ± 23	434 ± 22	427 ± 19	429 ± 18	
22	446 ± 23	446 ± 22	442 ± 20	442 ± 18	
25	456 ± 25	457 ± 23	452 ± 23	454 ± 21	
29	469 ± 26	468 ± 24	465 ± 23	463 ± 24	
32	477 ± 28	477 ± 23	473 ± 23	472 ± 24	
36	488 ± 30	488 ± 24	484 ± 26	481 ± 24	
39	495 ± 31	493 ± 25	489 ± 26	490 ± 24	
42	496 ± 32	497 ± 26	487 ± 26	490 ± 22	
Number of males	6	6	6	6	
Days of recovery					
1	507 ± 30	504 ± 26	494 ± 35	493 ± 30	
4	514 ± 32	512 ± 30	499 ± 36	499 ± 28	
8	523 ± 30	522 ± 27	508 ± 38	507 ± 30	
11	526 ± 31	529 ± 28	513 ± 39	509 ± 32	
14	535 ± 31	540 ± 29	521 ± 38	519 ± 32	

Each value shows mean (g) ± S.D.

Table 7 Body weights of female rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of females	12		12		12
Days of administration					
1	250 ± 7		250 ± 7	251 ± 6	249 ± 8
4	259 ± 13		256 ± 9	257 ± 6	256 ± 10
8	269 ± 15		266 ± 10	266 ± 7	264 ± 9
11	272 ± 19		269 ± 8	266 ± 9	265 ± 10
15	281 ± 21		277 ± 9	273 ± 10	272 ± 11
18	280 ± 10 (6)		307 (1)	284 ± 12 (4)	279 ± 13 (4)
22	-		-	-	323 (1)
25	-		-	-	335 (1)

Each value shows mean (g) ± S.D.

Table 8 Body weights of dams during pregnancy in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of dams	11	12	12	11	
Days of pregnancy					
0	285 ± 18	278 ± 13	278 ± 13	278 ± 20	
7	324 ± 18	319 ± 16	316 ± 20	316 ± 20	
14	359 ± 21	354 ± 19	351 ± 29	351 ± 24	
21	444 ± 27	444 ± 27	443 ± 37	443 ± 33	

Each value shows mean (g) ± S.D.

Table 9 Body weights of dams during lactation in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of dams	11		12		11
Days of lactation	0	334 ± 25	325 ± 24	330 ± 35	322 ± 29
	4	351 ± 27	347 ± 19	343 ± 26	349 ± 30
	6	335 ± 19	332 ± 22	334 ± 31	327 ± 31

Each value shows mean (g) ± S.D.

Table 10 Body weights of female rats (recovery group) in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole	
	0	250	250	1000
Number of females	6	6	6	6
Days of administration				
1	257 ± 7	258 ± 6	257 ± 7	
4	259 ± 13	267 ± 11	263 ± 11	
8	268 ± 11	277 ± 15	273 ± 17	
11	270 ± 10	279 ± 17	276 ± 15	
15	278 ± 12	288 ± 17	279 ± 16	
18	286 ± 13	298 ± 17	285 ± 13	
22	293 ± 15	305 ± 22	293 ± 12	
25	299 ± 16	311 ± 20	296 ± 11	
29	307 ± 19	316 ± 22	303 ± 12	
32	304 ± 17	317 ± 25	301 ± 9	
36	310 ± 20	324 ± 24	304 ± 9	
39	319 ± 19	325 ± 25	310 ± 14	
42	322 ± 20	328 ± 27	315 ± 15	
Number of females	6	6	6	
Days of recovery				
1	319 ± 22	327 ± 25	309 ± 13	
4	326 ± 24	333 ± 26	319 ± 13	
8	333 ± 25	338 ± 25	321 ± 12	
11	334 ± 23	344 ± 21	322 ± 9	
14	337 ± 27	348 ± 22	325 ± 8	

Each value shows mean (g) ± S.D.

Table 11 Food consumption of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of males	12	12	12	12	
Days of administration					
2	25 ± 3	26 ± 3	24 ± 3	26 ± 3	
5	25 ± 3	25 ± 2	25 ± 2	25 ± 3	
9	24 ± 2	25 ± 2	24 ± 2	25 ± 3	
12	25 ± 2	26 ± 2	25 ± 3	26 ± 4	
30	26 ± 2	26 ± 2	25 ± 3	26 ± 3	
33	25 ± 2	26 ± 3	26 ± 3	25 ± 2	
37	26 ± 2	26 ± 2	26 ± 2	27 ± 2	
40	25 ± 2	26 ± 3	24 ± 2	26 ± 2	
Number of males	6	6	6	6	
Days of recovery					
2	24 ± 2	24 ± 2	23 ± 2	23 ± 2	
5	24 ± 2	23 ± 1	22 ± 1 *	22 ± 1	
9	26 ± 3	26 ± 2	26 ± 3	25 ± 2	
12	27 ± 3	27 ± 1	27 ± 2	27 ± 3	

Each value shows mean (g/day) ± S.D.

Significantly different from control group (*: P<0.05).

Table 12 Food consumption of female rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of females	12	12	12	12	
Days of administration					
2	19 ± 2	19 ± 3	18 ± 4	19 ± 2	
5	20 ± 2	20 ± 3	20 ± 3	19 ± 4	
9	19 ± 3	19 ± 3	18 ± 3	18 ± 4	
12	20 ± 3	19 ± 3	19 ± 3	18 ± 3	

Each value shows mean (g/day) ± S.D.

Table 13 Food consumption of dams during pregnancy in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of dams	11	12	12	11	
Days of pregnancy					
2	22 ± 3	22 ± 2	21 ± 3	22 ± 2	
9	23 ± 3	25 ± 4	30 ± 22	24 ± 3	
16	24 ± 3	25 ± 4	25 ± 4	24 ± 3	
20	22 ± 3	23 ± 3	22 ± 3	23 ± 4	

Each value shows mean (g/day) ± S.D.

Table 14 Food consumption of dams during lactation in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	Control	bumetizole		
		62.5	250	1000
mg/kg	0	62.5	250	1000
Number of dams	11	12	12	11
Days of lactation	2	30 ± 6	30 ± 3	27 ± 5
Each value shows mean (g/day) ± S.D.				

Table 15 Food consumption of female rats (recovery group) in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control			bumetizole		
	0	250	1000	6	6	6
Number of females	6	6	6	6	6	6
Days of administration						
2	18 ± 3	19 ± 3	17 ± 3	17 ± 3	20 ± 4	19 ± 3
5	19 ± 1	18 ± 3	17 ± 4	16 ± 3	14 ± 3	17 ± 3
9	18 ± 2	17 ± 4	20 ± 3	17 ± 2	19 ± 3	17 ± 2
12	17 ± 3	19 ± 3	19 ± 4	17 ± 2	19 ± 3	18 ± 2
16	17 ± 3	20 ± 3	19 ± 3	17 ± 2	19 ± 3	18 ± 2
19	20 ± 3	20 ± 4	18 ± 4	17 ± 2	19 ± 3	18 ± 2
23	18 ± 2	18 ± 4	21 ± 4	19 ± 3	19 ± 3	18 ± 2
26	20 ± 3	21 ± 4	22 ± 2	23 ± 3	20 ± 2	21 ± 2
30	18 ± 4	18 ± 4	17 ± 1	18 ± 2	18 ± 2	19 ± 2
33	21 ± 1	22 ± 2	20 ± 3	21 ± 2	20 ± 2	21 ± 2
37	18 ± 2	17 ± 1	18 ± 3	19 ± 2	19 ± 2	19 ± 2
40	18 ± 3	20 ± 3	19 ± 4	18 ± 3	19 ± 4	19 ± 3
Number of females	6	6	6	6	6	6
Days of recovery						
2	20 ± 3	21 ± 3	20 ± 4	18 ± 2	20 ± 2	19 ± 3
5	22 ± 4	19 ± 4	20 ± 4	20 ± 2	20 ± 2	20 ± 2
9	21 ± 4	20 ± 4	19 ± 4	20 ± 3	20 ± 3	20 ± 3
12	23 ± 6	19 ± 4	20 ± 4	20 ± 4	20 ± 4	20 ± 4

Each value shows mean (g/day) ± S.D.

Table 16-1 FOB of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of males	12	12	12	12	
Observation of animals in cages					
Posture Mean (range)	Pre Day 7 Day 14 Day 21 Day 28 Day 35 Day 41	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)
Palpebral closure Mean (range)	Pre Day 7 Day 14 Day 21 Day 28 Day 35 Day 41	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)
Biting behavior Mean (range)	Pre Day 7 Day 14 Day 21 Day 28 Day 35 Day 41	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)
Clonic convulsions Mean (range)	Pre Day 7 Day 14 Day 21 Day 28 Day 35 Day 41	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)

Findings were graded as follows

Posture 1: Prone or recumbent position, 2: resting normally, 3: moving or running about, 4: jumping.

Palpebral closure 1: Eyelids open normally, 2: eyelids half-closed, 3: eyelids closed.

Biting behavior 1: Not observed, 2: observed.

Clonic convulsions 1: Not observed, 2: jaw convulsions, 3: tremor.

Table 16-2 FOB of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of males	12	12	12	12	
Observation of animals in cages					
Tonic convulsions	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)

Findings were graded as follows

Tonic convulsions

1: Not observed, 2: tonic extension, 3: opisthotonus convulsions, 4: saltatory convulsions, 5: asphyxial convulsions.

Table 16-3 FOB of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of males	12	12	12	12	
Observation of animals on observer's palm					
Ease of removal from cage	Pre	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Mean (range)	Day 7	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 14	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 21	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 28	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 35	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 41	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Ease of handling	Pre	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Mean (range)	Day 7	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 14	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 21	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 28	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 35	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 41	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Muscle tone	Pre	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Mean (range)	Day 7	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 14	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 21	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 28	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 35	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 41	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Fur conditions	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)

Findings were graded as follows

Ease of removal from cage

1: Docile and allowing itself to be handled, 2: rearing or cowering, 3: running about; hard to catch.

Ease of handling

1: Docile and allowing itself to be handled, 2: struggling slightly or vocalizing, 3: struggling and trying to bite observer's hand.

Muscle tone

1: Decreased, 2: normal, 3: increased.

Fur conditions

1: Normal, 2: slightly soiled, 3: markedly soiled.

Table 16-4 FOB of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group	Control		bumetizole		
mg/kg	0	62.5	250	1000	
Number of males	12	12	12	12	
Observation of animals on observer's palm					
Lacrimation	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Salivation	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Respiration	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)

Findings were graded as follows

Lacrimation 1: None, 2: mild, 3: marked.

Salivation 1: None, 2: mild, 3: marked.

Respiration 1: Normal, 2: bradypnea, 3: dyspnea.

Table 16-5 FOB of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole				1000
	0	62.5	12	250	12	12	
Number of males	12		12	12		12	
Open-field test							
Frequency of rearing Mean ± S.D.	Pre	8.8 ± 4.5	7.0 ± 4.0	7.3 ± 5.1	4.9 ± 4.1	3.7 ± 4.9	
	Day 7	3.3 ± 3.0	1.8 ± 2.1	2.7 ± 3.1	3.8 ± 3.7	3.8 ± 3.7	
	Day 14	2.0 ± 2.3	2.9 ± 3.3	1.0 ± 1.7	2.4 ± 2.5	2.4 ± 2.5	
	Day 21	2.3 ± 2.5	2.5 ± 2.5	2.1 ± 3.2	3.3 ± 2.6	3.3 ± 2.6	
	Day 28	3.3 ± 2.9	3.3 ± 4.9	4.1 ± 4.3	2.5 ± 2.5	2.5 ± 2.5	
	Day 35	3.4 ± 3.5	2.8 ± 3.1	3.2 ± 2.7	5.0 ± 3.7	5.0 ± 3.7	
	Day 41	5.1 ± 4.3	2.7 ± 3.7	4.0 ± 3.5			
Frequency of grooming Mean ± S.D.	Pre	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	
	Day 7	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	
	Day 14	0.1 ± 0.3	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	
	Day 21	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	
	Day 28	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	
	Day 35	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	
	Day 41	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	
Gait Mean (range)	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
Palpebral closure Mean (range)	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)	

Frequency of rearing (during a 2-minute period).

Frequency of grooming (during a 2-minute period).

Findings were graded as follows

Gait

1: Normal, 2: unmoving, 3: staggering, 4: hind-limbs extended and dragged, 5: all fours extended,
6: forelimbs extended and dragged; unable to support body, 7: standing on tiptoe.

Palpebral closure

1: Eyelids open normally, 2: eyelids half-closed, 3: eyelids closed.

Table 16-6 FOB of male rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of males	12	12	12	12	
Open-field test					
Consciousness	Pre	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Mean (range)	Day 7	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 14	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 21	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 28	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 35	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 41	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Behavioral abnormalities	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Righting reflex	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 7	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 14	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 21	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 28	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 35	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 41	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)

Findings were graded as follows

Consciousness

1: Comatose; no response, 2: exploring behavior, 3: excited and moving spasmodically.

Behavioral abnormalities

1: Not observed, 2: straub's reaction, 3: moving backward, 4: writhing.

Righting reflex

1: Righting itself immediately, 2: requiring 3 seconds or longer to right itself, 3: unable to right itself.

Table 17-1 FOB of female rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of females	12	12	12	12	
Observation of animals in cages					
Posture	Pre	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
Mean (range)	Day 8	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 15	2.0 (2)	2.0 (2)	2.0 (2)	2.0 (2)
	Day 1 of pregnancy	2.0 (2) [11]	2.0 (2)	2.0 (2)	2.0 (2) [11]
	Day 8 of pregnancy	2.0 (2) [11]	2.0 (2)	2.0 (2)	2.0 (2) [11]
	Day 15 of pregnancy	2.0 (2) [11]	2.0 (2)	2.0 (2)	2.0 (2) [11]
	Day 3 of lactation	2.0 (2) [11]	2.0 (2)	2.0 (2)	2.0 (2) [11]
Palpebral closure	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 8	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 15	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 1 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 8 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 15 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 3 of lactation	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
Biting behavior	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 8	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 15	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 1 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 8 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 15 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 3 of lactation	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
Clonic convulsions	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 8	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 15	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 1 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 8 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 15 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 3 of lactation	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]

Figures in parentheses [] indicate number of females.

Findings were graded as follows

Posture 1: Prone or recumbent position, 2: resting normally, 3: moving or running about, 4: jumping.

Palpebral closure 1: Eyelids open normally, 2: eyelids half-closed, 3: eyelids closed.

Biting behavior 1: Not observed, 2: observed.

Clonic convulsions 1: Not observed, 2: jaw convulsions, 3: tremor.

Table 17-2 FOB of female rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control		bumetizole		
	0	62.5	250	1000	
Number of females	12	12	12	12	
Observation of animals in cages					
Tonic convulsions	Pre	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
Mean (range)	Day 8	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 15	1.0 (1)	1.0 (1)	1.0 (1)	1.0 (1)
	Day 1 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 8 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 15 of pregnancy	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]
	Day 3 of lactation	1.0 (1) [11]	1.0 (1)	1.0 (1)	1.0 (1) [11]

Figures in parentheses [] indicate number of females.

Findings were graded as follows

Tonic convulsions 1: Not observed, 2: tonic extension, 3: opisthotonus convulsions, 4: saltatory convulsions, 5: asphyxial convulsions.

Table 17-3 FOB of female rats in combined repeat dose and reproductive/developmental toxicity screening test of bumetizole by oral administration

Group mg/kg	Control 0	bumetizole 62.5	bumetizole 250	bumetizole 1000	
Number of females	12	12	12	12	
Observation of animals on observer's palm					
Ease of removal from cage Mean (range)	Pre Day 8 Day 15 Day 1 of pregnancy Day 8 of pregnancy Day 15 of pregnancy Day 3 of lactation	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11]	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11]
Ease of handling Mean (range)	Pre Day 8 Day 15 Day 1 of pregnancy Day 8 of pregnancy Day 15 of pregnancy Day 3 of lactation	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11]	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11]
Muscle tone Mean (range)	Pre Day 8 Day 15 Day 1 of pregnancy Day 8 of pregnancy Day 15 of pregnancy Day 3 of lactation	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11]	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2)	2.0 (2) 2.0 (2) 2.0 (2) 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11] 2.0 (2) [11]
Fur conditions Mean (range)	Pre Day 8 Day 15 Day 1 of pregnancy Day 8 of pregnancy Day 15 of pregnancy Day 3 of lactation	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) [11] 1.0 (1) [11] 1.0 (1) [11] 1.0 (1) [11]	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1)	1.0 (1) 1.0 (1) 1.0 (1) 1.0 (1) [11] 1.0 (1) [11] 1.0 (1) [11] 1.0 (1) [11]

Figures in parentheses [] indicate number of females.

Findings were graded as follows

Ease of removal from cage 1: Docile and allowing itself to be handled, 2: rearing or cowering, 3: running about; hard to catch.

Ease of handling 1: Docile and allowing itself to be handled, 2: struggling slightly or vocalizing, 3: struggling and trying to bite observer's hand.

Muscle tone 1: Decreased, 2: normal, 3: increased.

Fur conditions 1: Normal, 2: slightly soiled, 3: markedly soiled.