Simulation Table I. Best Case Simulation. The simulations in this table represent the best possible case. It is assumed both the true LD50 and the true slope of the population dose response curve was known to the hypothetical investigator.

Each line of the table represents a separate study. For each study

The hypothetical investigator did not run an LD50 test because this value is known.

The hypothetical investigator dosed groups of 15 animals at the known LD13 and LD87.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Boundary rules were NOT observed, that is the animals were dosed at the true LD13 and true LD87 even if those values were less than 1 mg/kg bw or greater than 5000 mg/kg bw.

Estimates of LD50 and slope were made using probit analyses. Probit fits were judged to converge if the variance of the intercept parameter estimate was less than 1,000,000.

The median, 5% and 95% confidence limits of the results of 1000 separate simulation runs are presented for each study.

Table I

"True"		Estimated LD50			Estimated Sigma		
True LD50	True Sigma	Median	5%	95%	Median	5%	95%
250 mg/kg	0.12	250	199	314	0.115	0.0313	0.185
All runs including 231 runs that did not converge							
250 mg/kg	0.12	250	220	284	0.122	0.0900	0.185
Only includes the 769 runs that converge.							
250 mg/kg	0.5	250	96.9	645	0.481	0.13	0.769
Includes all runs including 217 that did not converge							
250 mg/kg	0.5	250	146	427	0.507	0.375	0.769
Only includes the 783 runs that converge							
250 mg/kg	1.25	250	23.4	2673	1.20	0.326	1.92
Includes all runs including 263 that did not converge							
250 mg/kg	1.25	250	65.4	955	1.27	0.938	1.92
Only includes the 768 runs that did converge							
250 mg/kg	2.00	250	5.64	11078	1.923	0.521	3.08
Includes 228 runs that did not converge							

Simulation Table II. Hybrid Approach Using Ten Animals at Various Levels. The simulations in this table explore a series of test designs based on using different groups of 10 rats dosed at estimated preset distances from the estimated LD50. Only one true LD50 was simulated.

All populations had a true LD50 of 250 mg/kg bw. The sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, but began the initial LD50 run at 250 mg/kg bw because of previous data on other compounds that indicated this was the likely LD50.

Each line of the table represents one study design tested:

The true sigma for the population sampled is as given in the table

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when six animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this initial UDP run was 0.5.

Based on the LD50 estimated from the UDP run, the hypothetical investigator assumed the population had a slope (or sigma) of 1, and chose doses for the supplemental procedure as given in the table.

The number of animals for each run included the animals used in the initial LD50 run.

Estimates of LD50 and slope were made using probit analyses of all data, including the results of the initial LD50 run. Probit fits were judged to converge if the variance of the intercept parameter estimate was less than 1,000,000.

For each line the median, 5% and 95% confidence limits of the results of 1000 separate simulation runs are presented. For each run the median, 5% and 95% confidence limits for the number of animals used in the entire study, including the initial LD50 run, are presented.

Table II

Supplemental test includes	TRUE	Estimated LD50			Estimated Sigma			Number of Animals		
dose groups of	Sigma	Median	5%	95%	Median	5%	95%	Median	5%	95%
10 rats at LD13, 40 and 87	0.12	250	140	305	0.0449	0.00914	0.242	37	37	37
10 rats at LD13 and 45	0.12	250	150	313	0.0458	0.0121	0.203	27	27	27
10 rats at LD13, 45, and 70	0.12	250	194	313	0.0458	0.0120	0.189	37	37	37
All runs including 685, 425, and 428 runs respectively that did not converge										
For comparison, data from current 401 (**True LD 50 is 50 mg/kg**), 5 rats at 20, 50, 100 mg/kg 970 runs did NOT converge										
		51	46	54	0.04	0.02	0.05	15	15	15
10 rats at LD13, 40 and 87	0.12	291	241	308	0.211	0.118	0.268			
10 rats at LD13 and 45	0.12	250	209	293	0.129	0.0362	0.230			
10 rats at LD13, 45, and 70	0.12	250	208	291	0.115	0.0362	0.205			
Only includes the 315, 575, and 572 runs respectively that converge.										
10 rats at LD13, 40 and 87	0.5	228	122	425	0.369	0.0486	0.711	37	37	38
10 rats at LD13 and 45	0.5	216	89.2	402	0.240	0.262	0.778	27	27	28
10 rats at LD13, 45, and 70	0.5	262	154	439	0.442	0.125	0.723	37	37	38
Includes all runs including 59, 75, 11 respectively that did not converge										
For comparison, data from current 401 (**True LD 50 is 50 mg/kg**), 5 rats at 20, 50, 100 mg/kg 70 runs did NOT converge										
		51	19	155	0.41	0.04	1.5	15	15	15
10 rats at LD13, 40 and 87	1.25	242	80.8	762	1.13	0.634	2.21	37	37	39
10 rats at LD13 and 45	1.25	182	35.6	998	0.961	0.200	3.37	27	27	29
10 rats at LD13, 45, and 70	1.25	225	67.5	799	1.06	0.534	2.62	37	37	39
For comparison, data from current 401 (**True LD 50 is 50 mg/kg**), 5 rats at 20, 50, 100 mg/kg										
		51	7.4	846	0.63	-14	15	15	15	15
10 rats at LD13, 40 and 87	2.00	234	34.7	2056	1.67	0.878	5.14	37	37	39
10 rats at LD13 and 45	2.00	164	17.2	2961	1.27	0.091	5.31	27	27	29
10 rats at LD13, 45, and 70	2.00	228	29.3	2251	1.47	0.657	6.42	37	37	39
Includes 12, 48, and 24 runs respectively with a negative slope										

Simulation Table III. Hybrid Approach Using Five, Seven, and Ten Animals. The simulations in this table explore a series of test designs based on using different size groups of rats dosed at estimated preset distances from the estimated LD50. Only one true LD50 was simulated.

All populations had a true LD50 of 250 mg/kg bw. The sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, but began the initial LD50 run at 250 mg/kg bw because of previous data on other compounds that indicated this was the likely LD50.

Each line of the table represents one study design tested:

The true sigma (reciprocal of slope) for the population sampled is as given in the table.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when six animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this initial UDP run was 0.5.

Based on the LD50 estimated from the UDP run, the hypothetical investigator assumed the population had a slope (or sigma) of 1, and chose doses for the supplemental procedure as given in the table.

The number of animals for each run included the animals used in the initial LD50 run.

Estimates of LD50 and slope were made using probit analyses of all data, including the results of the initial LD50 run. Probit fits were judged to converge if the variance of the intercept parameter estimate was less than 1,000,000.

For each line the median, 5% and 95% confidence limits of the results of 2000 separate simulation runs are presented. In this table the number of animals that died from the treatment were also tracked and are presented for each study design.

Table III

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
Three doses of five animals at doses of LD13; LD45; and LD70												
0.12	22	(22 -	22)	9	(8 -	13)	250	(150 -	313)	0.04	(0.012 -	0.20)
	All runs including 1116 runs that did not converge											
							250	(199 -	304)	0.12	(0.036 -	0.23)
	Only includes the 884 runs that converge.											
0.5	22	(22 -	23)	10	(7 -	13)	255	(136 -	477)	0.41	(0.40 -	0.81)
	Includes all runs including 85 that did not converge											
1.25	22	(22 -	24)	10	(7 -	14)	242	(55 -	1103)	0.91	(0.36 -	3.0)
	Includes all runs including 8 that did not converge											
2	22	(22 -	24)	10	(7 -	14)	229	(20 -	2843)	1.3	(0.50 -	>5.5)
	Includes 101 runs where sigma was <0; these were set to high values)											
Three doses of seven animals at doses of LD13; LD45; and LD70												
0.12	28	(28 -	28)	12	(10 -	17)	249	(189 -	313)	0.04	(0.012 -	0.20)
	All runs including 953 that did not converge											
							250	(205 -	297)	0.15	(0.32 -	022)
	Only includes 1047 runs that did converge											

Table III

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
0.5	28	(28 -	29)	12	(8 -	16)	265	(141 -	447)	0.41	(0.064 -	0.75)
	All runs including 63 that did not converge											
1.25	28	(28 -	30)	13	(8 -	18)	226	(58 -	925)	1	(0.47 -	2.8)
	All runs including 1 that did not converge											
2	28	(28 -	30)	13	(9 -	18)	217	(21 -	2544)	1.5	(0.60 -	27)
	Includes 76 runs where sigma was <0; these were set to high values)											
<u>Two runs of 10 animals at LD13 and LD70</u>												
0.12	27	(27 -	27)	13	(13 -	14)	250	(169 -	445)	0.66	(0.30 -	0.71)
	Includes all runs including the 1941 that did not converge											
							169	(169 -	203)	0.23	(0.23 -	0.30)
	Includes only the 59 runs that converged											
0.5	27	(27 -	28)	12	(9 -	14)	268	(144 -	516)	0.44	(0.066 -	0.75)
	Includes 273 runs that did not converge											
							268	(143 -	488)	0.45	(0.30 -	0.77)
	Includes only 1727 runs that do converge											
1.25	27	(27 -	29)	12	(8 -	17)	244	(63 -	1060)	1.1	(0.53 -	2.6)
	Includes 1 run that did not converge											
2	27	(27 -	29)	13	(9 -	17)	240	(20 -	3017)	1.6	(0.73 -	12)
	Includes 67 runs where sigma was <0; these were set to high values)											

Table III

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
Two groups of 10 animals at LD13 and LD70 plus one group of 5 animals at LD45												
0.12	32	(32 -	32)	14	(13 -	18)	250	(192 -	313)	0.039	(0.012 -	0.19)
Includes all runs including 1071 that did not converge												
							250	(192 -	304)	0.12	(0.036 -	0.21)
Includes only the 929 runs that converged												
0.5	32	(32 -	33)	14	(9 -	18)	265	(150 -	482)	0.44	(0.12 -	0.73)
Includes all runs including 42 that did not converge												
1.25	32	(32 -	34)	14	(9 -	20)	243	(67 -	973)	1.1	(0.50 -	2.8)
2	32	(32 -	34)	15	(11 -	20)	239	(27 -	2438)	1.5	(0.74 -	7.7)
Includes40 runs where sigma was <0; these were set to high values)												
Three doses of 10 animals at LD13, LD45 and LD70												
0.12	37	(37 -	37)	15	(13 -	22)	250	(194 -	313)	0.046	(0.12 -	0.19)
Includes all runs including the 846 did not converge												
							250	(200 -	291)	0.13	(0.36 -	0.21)
Includes only the 1154 runs that converged												
0.5	37	(37 -	38)	16	(10 -	22)	257	(155 -	418)	0.44	(0.13 -	0.72)
Includes all runs including the 30 runs that did not converge												
1.25	37	(37 -	39)	17	(10 -	23)	237	(76 -	875)	1.06	(0.53 -	2.6)
2	37	(37 -	39)	17	(11 -	23)	223	(29 -	2187)	1.6	(0.73 -	8.3)
Includes 41 runs where sigma was <0; these were set to high values)												

Simulation Table IV. Hybrid Approach Using Five, Seven and Ten Animals. The simulations in this table explore a series of test designs based on using different size groups of rats dosed at the estimated preset distances from the estimated LD50. Only one true LD50 was simulated.

All populations had a true LD50 of 250 mg/kg bw. The sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, but began the initial LD50 run at 250 mg/kg bw because of previous data on other compounds that indicated this was the likely LD50.

Each line of the table represents one study design tested:

The true sigma (reciprocal of slope) for the population sampled is as given in the table.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when six animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this initial UDP run was 0.5.

Based on the LD50 estimated from the UDP run, the hypothetical investigator assumed the population had a slope (or sigma) of 1, and chose doses for the supplemental procedure as given in the table.

The number of animals for each run included the animals used in the initial LD50 run.

Estimates of LD50 and slope were made using probit analyses of all data, including the results of the initial LD50 run. Probit fits were judged to converge if the variance of the intercept parameter estimate was less than 1,000,000.

For each line the median, 5% and 95% confidence limits of the results of 2000 separate simulation runs are presented. In this table the number of animals that died from the treatment were also tracked and are presented for each study design.

Table IV

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
Three doses of five animals at doses of LD13; LD40; and LD87												
0.12	22	(22 -	22)	9	(8 -	11)	250	(140 -	307)	0.041	(0.0094 -	0.23)
All runs including 1582 runs that did not converge												
							282	(230 -	307)	0.22	(0.17 -	0.29)
Only includes the 418 runs that converge.												
0.5	22	(22 -	23)	10	(8 -	13)	230	(100 -	461)	0.32	(0.30 -	0.76)
Includes all runs including 295 that did not converge												
							230	(110 -	471)	0.36	(0.20 -	0.77)
Only includes the 1705 runs that converge												
1.25	22	(22 -	24)	11	(8 -	14)	244	(55 -	1238)	1	(0.34 -	2.9)
Includes all runs including 8 that did not converge												
2	22	(22 -	24)	11	(8 -	14)	229	(19 -	4039)	1.6	(0.68 -	23)
Includes 81 runs where sigma was <0; these were set to high values)												
Three doses of seven animals at doses of LD13; LD40; and LD87												
0.12	28	(28 -	28)	11	(10 -	14)	250	(140 -	304)	0.041	(0.01 -	0.24)
All runs including 1504 that did not converge												
							296	(238 -	308)	0.2	(0.15 -	0.28)
Only includes 496 runs that did converge												

Table IV

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
0.5	28	(28 -	29)	13	(10 -	16)	233	(110 -	451)	0.34	(0.030 -	0.73)
	All runs including 197 that did not converge											
							230	(114 -	453)	0.37	(0.19 -	0.74)
	Only includes 1803 runs that did converge											
1.25	28	(28 -	30)	14	(9 -	18)	236	(67 -	925)	1.1	(0.57 -	2.6)
	All runs including 2 that did not converge											
2	28	(28 -	30)	14	(10 -	18)	242	(26 -	3011)	1.6	(0.77 -	13)
	Includes 61 runs where sigma was <0; these were set to high values)											
Two runs of 10 animals at LD13 and LD87												
0.12	27	(27 -	27)	14	(13 -	14)	250	(140 -	445)	0.65	(0.3 -	0.72)
	No runs converged											
0.5	27	(27 -	28)	14	(12 -	15)	250	(123 -	494)	0.38	(0.064 -	0.73)
	Includes 952 runs that did not converge											
							245	(123 -	494)	0.58	(0.38 -	79)
	Includes only 1048 runs that do converge											
1.25	27	(27 -	29)	14	(10 -	17)	248	(67 -	1006)	1.1	(0.62 -	2.4)
	Includes 16 runs that did not converge											
2	27	(27 -	29)	13	(10 -	17)	251	(27 -	2269)	1.7	(0.88 -	7.5)
	Includes 41 runs where sigma was <0; these were set to high values)											

Table IV

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
Two groups of 10 animals at LD13 and LD87 plus one group of 5 animals at LD40												
0.12	32	(32 -	32)	14	(13 -	16)	250	(140 -	307)	0.042	(0.0093 -	0.23)
Includes all runs including 1572 that did not converge												
							282	(230 -	307)	0.22	(0.17 -	0.27)
Includes only the 428 runs that converged												
0.5	32	(32 -	33)	15	(13 -	18)	233	(126 -	437)	0.37	(0.03 -	0.71)
Includes all runs including 247 that did not converge												
							231	(130 -	448)	0.41	(0.21 -	0.72)
Includes only the 1753 runs that did converge												
1.25	32	(32 -	34)	16	(11 -	21)	236	(75 -	833)	1.1	(0.61 -	2.4)
Includes 3 runs that did not converge												
2	32	(32 -	34)	16	(11 -	21)	238	(30 -	1806)	1.7	(0.88 -	6.2)
Includes 24 runs where sigma was <0; these were set to high values)												
Three doses of 10 animals at LD13, LD40 and LD87												
0.12	37	(37 -	37)	14	(13 -	18)	250	(140 -	305)	0.045	(0.11 -	0.24)
Includes all runs including the 1416 did not converge												
							291	(241 -	305)	0.18	(0.12 -	0.27)
Includes only the 584 runs that converged												
0.5	37	(37 -	38)	17	(13 -	21)	228	(131 -	423)	0.39	(0.15 -	0.71)
Includes all runs including the 93 runs that did not converge												
1.25	37	(37 -	39)	18	(12 -	23)	248	(75 -	760)	1.14	(0.63 -	2.2)
2	37	(37 -	39)	18	(12 -	24)	236	(32 -	2048)	1.7	(0.86 -	6.9)
Includes 30 runs where sigma was <0; these were set to high values												

Simulation Table V. Multiple Up-and-Down Sequences Using Modified Dosing Procedures. The simulations in this table explore a series of test designs based on using different multiple UDP runs to obtain data used in probit analysis to estimate sigma. In order to maximize the ability to detect very shallow dose response situations and still minimize the number of animals actually dying from the treatment, all runs are started three sigmas (with sigma assumed to be 0.5) below the estimated LD50 and each run stopped when the first animal died. The supplemental runs were run in parallel. Only one true LD50 was simulated.

All populations had a true LD50 of 250 mg/kg bw. The sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, but began the initial LD50 run at 250 mg/kg bw because of previous data on other compounds that indicated this was the likely LD50.

Each line of the table represents one study design tested:

The true sigma (reciprocal of slope) for the population sampled is as given in the table.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when six animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this initial UDP run was 0.5.

Based on the LD50 estimated from the UDP run, the hypothetical investigator started five or six supplemental runs at three sigmas, (sigma estimated to be 0.5) below the LD50 as given in the table. For each run the boundary rules were respected but the stopping rule detailed in the guideline was not followed since each run stopped with the first death. The dose spacing for these runs was also based on an estimated sigma of 0.5.

For each set of parallel runs the hypothetical investigator used the protocol in the proposed guideline to offset the starting doses just slightly so no two animals in the set were dosed at the exact same dose.

The number of animals for each run included the animals used in the initial LD50 run.

Estimates of LD50 and slope were made using probit analyses of all data, including the results of the initial LD50 run. Probit fits were judged to converge if the variance of the intercept parameter estimate was less than 1,000,000.

For each line the median, 5% and 95% confidence limits of the results of 2000 separate simulation runs are presented. In this table the number of animals that died from the treatment were also tracked and are presented for each study design.

Table V

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
Six runs of nominal size 2 starting approximately 3 sigma below LD50 (includes data from original UDP LD50 run)												
0.12	37	(34 -	41)	9	(9 -	10)	250	(208 -	304)	0.07	(0.0020 -	0.20)
All runs including 530 runs that did not converge												
							251	(207 -	312)	0.1	(0.035 -	0.21)
Only includes the 1470 runs that converge.												
0.25	37	(33 -	41)	10	(9 -	10)	250	(183 -	342)	0.2	(0.0059 -	0.38)
All runs including 110 that did not converge												
0.5	36	(30 -	42)	10	(9 -	10)	247	(138 -	444)	0.42	(0.18 -	0.74)
Includes all runs including 14 that did not converge												
1.25	30	(21 -	39)	10	(8 -	11)	213	(54 -	1378)	1.1	(0.52 -	3.1)
Includes 11 runs where sigma was <0; these were set to high values)												
2	26	(19 -	35)	10	(8 -	11)	162	(19 -	5635)	1.6	(0.73 -	27)
Includes 77 runs where sigma was <0; these were set to high values)												

Table V

TRUE Sigma	Total Number of Animals Median	5%	95%	Total Number That Die Median	5%	95%	Estimated LD50 Median	5%	95%	Estimated Sigma Median	5%	95%
Five runs of nominal size 2 starting approximately 3 sigma below LD50 (includes data from original UDP LD50 run)												
0.12	32	(30 -	35)	9	(8 -	9)	250	(205 -	305)	0.073	(0.0012 -	0.20)
All runs including 728 that did not converge												
							250	(205 -	305)	0.12	(0.032 -	0.20)
Only includes 1272 runs that did converge												
0.25	32	(29 -	36)	9	(8 -	9)	250	(183 -	345)	0.2	(0.0033 -	0.38)
All runs including 205 runs that did not converge												
							252	(182 -	346)	0.21	(0.058 -	0.39)
Only includes 1795 runs that did converge												
0.5	31	(26 -	37)	9	(8 -	9)	250	(138 -	455)	0.41	(0.15 -	0.75)
All runs including 22 that did not converge												
1.25	26	(19 -	34)	9	(7 -	10)	200	(50 -	1481)	1	(0.48 -	3.5)
2	23	(16 -	31)	9	(7 -	10)	156	(16 -	4947)	1.5	(0.69 -	34)
Includes 81 runs where sigma was <0; these were set to high values)												

Simulation Table VI. Multiple Up-and-Down Sequences. The simulations in this table explore a series of test designs based on using different multiple UDP runs to obtain data used in probit analysis to estimate sigma. In order to maximize the ability to detect very shallow dose response situations and still minimize the number of animals actually dying from the treatment, all runs are started below the estimated LD50 and each run stopped when the first animal died. The supplemental runs were run in parallel. Only one true LD50 was simulated.

All populations had a true LD50 of 250 mg/kg bw. The sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, but began the initial LD50 run at 250 mg/kg bw because of previous data on other compounds that indicated this was the likely LD50.

Each line of the table represents one study design tested:

The true sigma (reciprocal of slope) for the population sampled is as given in the table.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when six animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this initial UDP run was 0.5.

Based on the LD50 estimated from the UDP run, the hypothetical investigator started three or four supplemental runs at a given distance below the estimated LD50 as given in the table. For these estimates the hypothetical investigator used an assumed sigma of 0.5. For each run the boundary rules were respected but the stopping rule detailed in the guideline was not followed since each run stopped with the first death. The dose spacing for these runs was determined using a estimated sigma of 0.5.

For each set of parallel runs the investigator used the protocol in the proposed guideline to offset the starting doses just slightly so no two animals in the set were dosed at the exact same dose.

The number of animals for each run included the animals used in the initial LD50 run.

Estimates of LD50 and slope were made using probit analyses of all data, including the results of the initial LD50 run. Probit fits were judged to converge if the variance of the intercept parameter estimate was less than 1,000,000.

For each line the median, 5% and 95% confidence limits of the results of 1000 separate simulation runs are presented. In this table the number of animals that died from the treatment were also tracked and are presented for each study design.

Table VI

No. of repetitions	No of sigmas between LD50 and starting dose	No. of runs that do not converge	Estimated LD50			Estimated Sigma			Number of Animals Used (Includes initial LD50 run)		
			Median	5%	95%	Median	5%	95%	Median	5%	95%
True sigma = 0.12 all runs											
4	3	487	250	211	297	0.0744	0.00418	0.199	27	25	30
3	3	493	250	208	301	0.0582	0.00196	0.214	23	21	24
4	2	458	250	211	296	0.0772	0.0042	0.194	23	21	26
For comparison, data from current 401 (**True LD 50 is 50 mg/kg**), 5 rats at 20, 50, 100 mg/kg			970 runs did NOT converge								
			51	46	54	0.04	0.02	0.05	15	15	15
True sigma = 0.12, only runs that converge (all others would be considered steep slopes)											
4	3		247	197	318	0.119	0.0744	0.230			
3	3		248	191	326	0.098	0.0582	0.227			
4	2		249	196	318	0.119	0.0745	0.220			
True sigma = 0.5, all runs											
4	3	18	247	131	469	0.402	0.147	0.761	27	23	31
3	3	52	250	129	490	0.368	0.011	0.75	22	19	25
4	2	32	249	131	470	0.384	0.083	0.82	23	18	27
For comparison, data from current 401 (**True LD 50 is 50 mg/kg**), 5 rats at 20, 50, 100 mg/kg			70 runs did NOT converge								
			51	19	155	0.41	0.04	1.5	15	15	15
True sigma = 1.25, all runs											
4	3	1	189	41.0	1277	1.03	0.371	3.30	22	16	29
3	3	5	195	43.1	1239	0.91	0.285	2.95	19	14	25
4	2	0	209	45.1	1051	0.94	0.375	3.16	20	14	27
For comparison, data from current 401 (**True LD 50 is 50 mg/kg**), 5 rats at 20, 50, 100 mg/kg											
			51	7.4	846	0.63	-14	15	15	15	15
True sigma = 1.25, runs with negative slopes arbitrarily set to sigma estimate = 1000											
4	3		189	41.0	1277	1.053	0.405	3.78			
3	3		195	43.1	1239	0.934	0.336	4.47			
4	2		209	45.1	1051	0.962	0.4	3.9			
The number of runs with negative slopes is 13, 14 and 13 respectively.											
True sigma = 2.00, all runs											
4	3		158	12.0	6186	1.44	-1.92	6.71	20	14	26
3	3		168	10.9	4920	1.3	-2.92	5.8	17	12	23
4	2		147	10.5	4852	1.21	-2.22	5.36	18	13	25
True sigma = 2.00, runs with negative slopes arbitrarily set to sigma estimate = 1000											
4	3		158	12.0	6186	1.60	0.602	1000			
3	3					1.41	0.502	1000			
4	2					1.33	0.541	1000			
The number of runs with negative slopes is 57, 66, and 58 respectively.											

Simulation Table VII. Simulation of Current OECD Test Guideline 401. The simulations in this table explore the ability of the current OECD Guideline 401 to estimate the slope of a dose response curve. Simulations were done with four different choices of dose progressions. The choices were selected after talking to actual contract laboratories to obtain their usual dose progressions when little is known of the LD50 or slope of the test material.

Several different populations were tested with variations in both the true LD50 and the true slope (reciprocal of sigma) of the populations as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, and was able to select from one of four possible dose progressions again as detailed in the table. Certain dose selections were completely unsatisfactory for certain populations, and in this case the simulations failed completely and are not listed in the table. It could be assumed the hypothetical investigator would begin a second study with a different dose progression in these cases.

Each line of the table represents one study design tested:

The true LD and sigma (reciprocal of slope) for the population sampled is as given in the table.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Three doses were selected for each design. These doses were chosen based on the suggestion of several contract laboratories as defaults when little is known of the LD50 or slope. For each dose five animals of one sex were tested.

Fifteen animals were used for each run.

Estimates of LD50 and slope were made using probit analyses of all data. Probit fits were judged to converge if the variance of the intercept parameter estimate was less than 1,000,000.

For each line the median, 5% and 95% confidence limits of the results of 1000 separate simulation runs are presented. In this table the number of animals that died from the treatment were also tracked and are presented for each study design.

Table VII

"True" LD50 mg/kg	"True" Sigma	Starting Dose mg/kg	*Estimated LD50* Median	*Estimated LD50* 90% Range	*Estimated sigma* Median	*Estimated sigma* 90% Range	% that do NOT converge	% with any failure	No. of aminals that die (15 dosed)
1.5	0.12	.1, 1.5, 5	1.5	1.3 - 1.7	0.07	0.07 - 0.08	99.9%	99.9%	8
		20,50,100	*	*	*	*	0	100%	15
	0.25	.1, 1.5, 5	1.6	1.3 - 2.0	0.08	0.07 - 0.45	92%	91%	7
		20,50,100	18	18	0.06	0.06	0%	100%	15
	0.5	.1, 1.5, 5	1.6	0.76 - 3.8	0.31	0.06 - 0.79	45%	45%	7
		20,50,100	18	18 - 7.4 E+07	0.06	-4.1 - 0.06	6%	99.9%	15
	1.25	.1, 1.5, 5	1.4	0.13 - 17	1.0	0.07 - 4.3	6%	11%	7
		20,50,100	18	0.0 - 7.4 E+07	0.06	-4.1 - 8.8	31%	64%	13
50	0.12	.1, 1.5, 5	*	*	*	*	0%	100%	0
		20,50,100	51	46 - 54	0.04	0.02 - 0.05	97%	97%	8
		150,300,500	137	137	0.05	0.05	0.02%	100%	15
		1000, 2000, 3000	*	*	*	*	0%	100%	15
	0.25	.1, 1.5, 5	5.9	5.9	0.08	0.08	0.02%	100%	0
		20,50,100	51	32 - 74	0.22	0.04 - 0.43	42%	42%	7
		150,300,500	137	137 - 146	0.05	0.04 - 0.05	13%	99.9%	15
		1000, 2000, 3000	911	911	0.05	0.05	0%	100%	15
	0.5	.1, 1.5, 5	5.9	5.9 - 29	0.08	0.08 - 1.1	11%	99%	0.1
		20,50,100	51	19 - 155	0.41	0.04 - 1.5	7%	12%	7
		150,300,500	137	58 - 5 E+06	0.05	(-2.8) - 0.79	43%	80%	14
		1000, 2000, 3000	911	911 - 3.2 E+05	0.05	(-1.5) - 0.05	2%	99.99%	15
	1.25	.1, 1.5, 5	5.9	0.07 - 2.4 E+05	0.47	(-0.19) - 3.5	37%	56%	2
		20,50,100	51	7.4 - 846	0.63	(-14) - 15	1%	28%	7
		150,300,500	166	5 E-05 - 5 E+06	0.31	(-10) - 9.7	8%	40%	11
		1000, 2000, 3000	911	0.44 - 3.2 E+05	0.05	(-4.4) - 3.2	31%	73%	13

Table VII

"True" LD50 mg/kg	"True" Sigma	Starting Dose mg/kg	*Estimated LD50* Median	*Estimated LD50* 90% Range	*Estimated sigma* Median	*Estimated sigma* 90% Range	% that do NOT converge	% with any failure	No. of aminals that die (15 dosed)
1500	0.12	20,50,100	*	*	*	*	0%	100%	0
		150,300,500	536	536	0.04	0.04	0.02%	100%	0
		1000, 2000, 3000	1416	1076 - 1970	0.03	0.02 - 0.19	80%	80%	10
		1500, 3000, 5000	1536	1367 - 1614	0.04	0.04 - 0.05	94%	97%	13
	0.25	20,50,100	110	110	0.05	0.05	0.001%	100%	0
		150,300,500	536	510 - 5 E+06	0.04	0.03 - 2.8	13%	99%	0.2
		1000, 2000, 3000	1520	890 - 2232	0.22	0.02 - 0.75	20%	21%	9
		1500, 3000, 5000	1536	641 - 2350	0.05	0.04 - 0.67	50%	53%	12
	0.5	20,50,100	110	110 - 7.4 E+07	0.05	0.05 - 4.1	5%	99%	0.1
		150,300,500	536	0.00 - 5 E+06	0.04	(-6.1) - 2.8	38%	67%	1
		1000, 2000, 3000	1545	327 - 5281	0.39	(-1.3) - 5.2	4%	15%	8
		1500, 3000, 5000	1739	4.0 - 10,701	0.31	(-4.5) - 4.6	10%	22%	10
	1.25	20,50,100	110	0.00 - 7.4 E+07	0.05	(-8.8) - 4.1	29%	60%	2
		150,300,500	473	0.00 - 5 E+06	0.32	(-10) - 8.3	7%	39%	4
		1000, 2000, 3000	1693	11 - 6432	0.42	(-4.4) - 3.8 E+15	1%	32%	8
		1500, 3000, 5000	2327	0.19 - 20,671	0.46	(-8.3) - 10	2%	31%	9
3000	0.12	150,300,500	*	*	*	*	0%	100%	0
		1000, 2000, 3000	2958	2450 - 5132	0.03	0.02 - 0.35	68%	70%	3
		1500, 3000, 5000	3054	2635 - 3870	0.03	0.02 - 0.19	83%	83%	7
	0.25	150,300,500	536	536	0.04	0.04	0.5%	99.98%	0
		1000, 2000, 3000	2958	2028 - 6432	0.20	0.02 - 0.86	23%	26%	4
		1500, 3000, 5000	3054	2069 - 4735	0.20	0.03 - 0.57	21%	21%	7
	0.5	150,300,500	536	137 - 5E+06	0.04	(-0.05) - 2.8	25%	89%	0.4
		1000, 2000, 3000	2665	602 - 11,881	0.32	(-0.96) - 4.4	5%	19%	5
		1500, 3000, 5000	3050	1032 - 10,599	0.39	(-1.1) - 6.1	4%	13%	7
	1.25	150,300,500	510	0.00 - 5 E+06	0.26	(-2.3 E+15) - 4.5	14%	47%	3
		1000, 2000, 3000	2033	54 - 9259	0.43	(-2.8) - 3.8 E+15	1%	34%	7
		1500, 3000, 5000	3050	0.19 - 20,671	0.47	(-8.3) - 1.2 E+16	1%	31%	7

Simulation Table VIII. Multiple Up-and-Down Sequences with Varying Nominals and Averaging Slopes – Dose and Progression Set Sequentially. The simulations in this table explore a test design to estimate slope based on using three, four or five full UDP runs and also varying the number of animals tested after the first reversal. The slopes and LD50's from the individual runs were averaged to obtain the final estimate of the LD50 and slope. The estimated LD50 of each run was used to set the starting dose and dose progression for the next run.

The actual LD50 and sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope and began the initial LD50 run at a series of different starting doses as indicated in the table. The starting doses the hypothetical investigator chose were (unknown to him or her) the actual LD10, LD50 and LD80. In addition, the length of the UDP runs was varied by changing the number of animals tested after the first reversal.

Each line of the table represents one study design tested:

Each line summarizes the results of 2500 simulated tests from a population with a true LD50 and sigma (reciprocal of slope) as detailed in the table.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

The number of animals tested after the first reversal is as detailed in the table.

Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when six animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this initial UDP run was 0.5.

Based on the LD50 estimated from the first UDP run, the investigator started a second full UDP LD50 run beginning at the LD50 estimated from the first run. Based on the results of the second run a third full UDP run was started. This procedure continued until the final number of full runs was completed.

Final estimates of LD50 and slope were made by averaging the LD50's and slopes obtained from all the runs.

For each line the median, 5%, and 95% confident limits of the results of 2500 separate simulation runs are presented. In this table the number of animals used were tracked and are presented for each study design.

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1.50	0.12	3	3	1.05	1.38	1.01	1.92	0.23	0.00	0.43	15	15	16
1.50	0.12	3	3	1.50	1.31	1.03	1.92	0.23	0.00	0.43	15	15	16
1.50	0.12	3	3	1.89	1.41	1.03	1.92	0.23	0.00	0.46	15	15	16
1.50	0.12	3	4	1.05	1.60	1.12	1.93	0.17	0.00	0.41	18	18	19
1.50	0.12	3	4	1.50	1.57	1.12	1.93	0.17	0.00	0.41	18	18	19
1.50	0.12	3	4	1.89	1.59	1.13	1.97	0.17	0.00	0.43	18	18	19
1.50	0.12	3	5	1.05	1.40	1.12	1.84	0.21	0.04	0.41	21	21	22
1.50	0.12	3	5	1.50	1.40	1.12	1.90	0.21	0.04	0.41	21	21	22
1.50	0.12	3	5	1.89	1.40	1.12	1.85	0.20	0.04	0.41	21	21	22
1.50	0.12	4	3	1.05	1.36	1.04	1.84	0.23	0.11	0.41	20	20	21
1.50	0.12	4	3	1.50	1.38	1.04	1.85	0.23	0.11	0.41	20	20	21
1.50	0.12	4	3	1.89	1.38	1.03	1.83	0.23	0.11	0.42	20	20	21
1.50	0.12	4	4	1.05	1.53	1.17	1.90	0.19	0.10	0.37	24	24	25
1.50	0.12	4	4	1.50	1.53	1.23	1.91	0.19	0.10	0.37	24	24	25
1.50	0.12	4	4	1.89	1.53	1.19	1.89	0.19	0.10	0.37	24	24	25
1.50	0.12	4	5	1.05	1.43	1.15	1.78	0.21	0.09	0.38	28	28	29
1.50	0.12	4	5	1.50	1.43	1.15	1.80	0.21	0.09	0.38	28	28	29
1.50	0.12	4	5	1.89	1.41	1.15	1.79	0.22	0.09	0.39	28	28	29
1.50	0.12	5	3	1.05	1.35	1.07	1.73	0.23	0.10	0.39	25	25	26
1.50	0.12	5	3	1.50	1.34	1.08	1.71	0.22	0.10	0.39	25	25	26
1.50	0.12	5	3	1.89	1.35	1.05	1.75	0.23	0.10	0.40	25	25	26
1.50	0.12	5	4	1.05	1.52	1.22	1.85	0.19	0.09	0.37	30	30	31
1.50	0.12	5	4	1.50	1.53	1.22	1.86	0.19	0.09	0.35	30	30	31
1.50	0.12	5	4	1.89	1.53	1.23	1.85	0.19	0.09	0.34	30	30	31
1.50	0.12	5	5	1.05	1.39	1.17	1.70	0.21	0.09	0.36	35	35	36
1.50	0.12	5	5	1.50	1.41	1.18	1.72	0.22	0.09	0.36	35	35	36
1.50	0.12	5	5	1.89	1.41	1.16	1.71	0.21	0.09	0.36	35	35	36

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1.50	0.25	3	3	1.00	1.44	0.96	2.28	0.30	0.08	0.62	15	15	17
1.50	0.25	3	3	1.50	1.45	0.94	2.29	0.30	0.10	0.62	15	15	17
1.50	0.25	3	3	2.43	1.46	0.94	2.28	0.30	0.09	0.62	15	15	17
1.50	0.25	3	4	1.00	1.52	1.01	2.17	0.29	0.08	0.57	18	18	20
1.50	0.25	3	4	1.50	1.48	0.97	2.16	0.29	0.09	0.56	18	18	20
1.50	0.25	3	4	2.43	1.52	1.00	2.28	0.27	0.07	0.57	18	18	20
1.50	0.25	3	5	1.00	1.46	1.01	2.10	0.28	0.09	0.58	21	21	23
1.50	0.25	3	5	1.50	1.47	1.00	2.10	0.29	0.09	0.60	21	21	23
1.50	0.25	3	5	2.43	1.47	1.02	2.13	0.28	0.07	0.59	21	21	23
1.50	0.25	4	3	1.00	1.48	1.00	2.10	0.31	0.12	0.57	20	20	22
1.50	0.25	4	3	1.50	1.47	1.00	2.16	0.31	0.12	0.57	20	20	22
1.50	0.25	4	3	2.43	1.47	1.00	2.10	0.32	0.12	0.58	20	20	22
1.50	0.25	4	4	1.00	1.51	1.05	2.10	0.31	0.11	0.53	24	24	26
1.50	0.25	4	4	1.50	1.49	1.04	2.10	0.30	0.11	0.54	24	24	26
1.50	0.25	4	4	2.43	1.49	1.05	2.04	0.30	0.11	0.52	24	24	26
1.50	0.25	4	5	1.00	1.47	1.06	2.02	0.30	0.11	0.55	28	28	31
1.50	0.25	4	5	1.50	1.48	1.06	2.02	0.30	0.11	0.54	28	28	30
1.50	0.25	4	5	2.43	1.47	1.06	2.04	0.30	0.11	0.56	28	28	30
1.50	0.25	5	3	1.00	1.44	1.03	2.02	0.32	0.14	0.54	26	25	28
1.50	0.25	5	3	1.50	1.46	1.03	2.05	0.32	0.14	0.55	26	25	28
1.50	0.25	5	3	2.43	1.46	1.03	2.05	0.32	0.14	0.54	26	25	28
1.50	0.25	5	4	1.00	1.49	1.06	2.02	0.32	0.15	0.51	31	30	33
1.50	0.25	5	4	1.50	1.48	1.09	1.99	0.32	0.15	0.52	31	30	33
1.50	0.25	5	4	2.43	1.50	1.07	2.02	0.32	0.14	0.52	31	30	33
1.50	0.25	5	5	1.00	1.46	1.09	1.93	0.30	0.14	0.51	36	35	38
1.50	0.25	5	5	1.50	1.46	1.10	1.93	0.31	0.13	0.53	36	35	38
1.50	0.25	5	5	2.43	1.46	1.09	1.96	0.31	0.13	0.52	36	35	38

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1.50	0.50	3	3	1.00	1.57	0.88	2.98	0.39	0.11	0.79	16	15	18
1.50	0.50	3	3	1.50	1.59	0.87	3.03	0.38	0.10	0.79	16	15	18
1.50	0.50	3	3	3.95	1.60	0.90	2.95	0.38	0.10	0.81	16	15	18
1.50	0.50	3	4	1.00	1.58	0.92	2.86	0.37	0.11	0.78	19	17	21
1.50	0.50	3	4	1.50	1.59	0.92	2.79	0.38	0.11	0.78	19	17	21
1.50	0.50	3	4	3.95	1.58	0.92	2.81	0.39	0.10	0.82	19	16	21
1.50	0.50	3	5	1.00	1.56	0.94	2.72	0.38	0.11	0.81	22	19	24
1.50	0.50	3	5	1.50	1.57	0.94	2.71	0.39	0.11	0.79	22	18	24
1.50	0.50	3	5	3.95	1.56	0.93	2.64	0.38	0.11	0.81	22	18	24
1.50	0.50	4	3	1.00	1.60	0.95	2.77	0.40	0.14	0.72	21	20	23
1.50	0.50	4	3	1.50	1.58	0.96	2.74	0.41	0.14	0.74	21	20	23
1.50	0.50	4	3	3.95	1.58	0.98	2.70	0.42	0.16	0.73	21	20	23
1.50	0.50	4	4	1.00	1.58	0.99	2.56	0.41	0.16	0.72	25	22	27
1.50	0.50	4	4	1.50	1.58	0.97	2.56	0.41	0.17	0.75	25	22	27
1.50	0.50	4	4	3.95	1.58	0.97	2.58	0.41	0.16	0.76	25	22	27
1.50	0.50	4	5	1.00	1.55	0.99	2.48	0.41	0.16	0.74	29	25	31
1.50	0.50	4	5	1.50	1.56	1.01	2.45	0.40	0.15	0.75	29	25	31
1.50	0.50	4	5	3.95	1.55	1.02	2.49	0.41	0.16	0.76	29	26	31
1.50	0.50	5	3	1.00	1.61	1.01	2.59	0.42	0.19	0.69	26	25	29
1.50	0.50	5	3	1.50	1.59	1.02	2.62	0.42	0.19	0.70	26	24	29
1.50	0.50	5	3	3.95	1.58	1.02	2.60	0.42	0.19	0.70	26	25	29
1.50	0.50	5	4	1.00	1.58	1.05	2.45	0.42	0.20	0.71	31	29	34
1.50	0.50	5	4	1.50	1.58	1.04	2.47	0.42	0.20	0.72	31	29	34
1.50	0.50	5	4	3.95	1.57	1.02	2.46	0.42	0.19	0.71	31	28	34
1.50	0.50	5	5	1.00	1.56	1.04	2.34	0.42	0.19	0.71	36	32	39
1.50	0.50	5	5	1.50	1.57	1.05	2.37	0.42	0.19	0.71	36	33	39
1.50	0.50	5	5	3.95	1.56	1.03	2.36	0.42	0.19	0.71	36	32	39

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1.50	1.25	3	3	1.00	2.01	0.89	5.96	0.53	0.14	1.13	16	15	19
1.50	1.25	3	3	1.50	1.98	0.87	5.77	0.51	0.13	1.11	16	14	18
1.50	1.25	3	3	16.91	2.40	0.98	8.23	0.57	0.15	1.24	17	15	19
1.50	1.25	3	4	1.00	1.98	0.93	5.68	0.54	0.13	1.16	19	16	22
1.50	1.25	3	4	1.50	1.96	0.92	5.69	0.53	0.12	1.15	19	16	21
1.50	1.25	3	4	16.91	2.31	1.02	7.10	0.60	0.15	1.23	19	17	22
1.50	1.25	3	5	1.00	1.95	0.94	5.33	0.55	0.14	1.19	22	18	25
1.50	1.25	3	5	1.50	1.96	0.90	5.46	0.55	0.15	1.21	22	18	25
1.50	1.25	3	5	16.91	2.25	1.00	6.53	0.61	0.17	1.29	22	19	25
1.50	1.25	4	3	1.00	2.07	1.02	5.39	0.58	0.20	1.08	21	20	25
1.50	1.25	4	3	1.50	2.03	1.00	5.67	0.57	0.21	1.08	22	20	24
1.50	1.25	4	3	16.91	2.40	1.06	6.81	0.63	0.22	1.14	22	20	25
1.50	1.25	4	4	1.00	2.03	1.01	5.11	0.58	0.22	1.09	25	22	28
1.50	1.25	4	4	1.50	2.00	0.98	4.80	0.59	0.21	1.12	25	23	28
1.50	1.25	4	4	16.91	2.25	1.07	5.93	0.64	0.25	1.18	26	23	29
1.50	1.25	4	5	1.00	1.98	1.02	4.68	0.59	0.21	1.13	29	25	32
1.50	1.25	4	5	1.50	1.97	1.04	4.61	0.60	0.21	1.13	29	25	32
1.50	1.25	4	5	16.91	2.25	1.15	5.52	0.65	0.23	1.22	30	26	33
1.50	1.25	5	3	1.00	2.08	1.07	4.95	0.59	0.26	1.03	27	25	30
1.50	1.25	5	3	1.50	2.09	1.06	4.99	0.59	0.25	1.02	27	25	30
1.50	1.25	5	3	16.91	2.34	1.12	5.92	0.63	0.27	1.08	27	25	31
1.50	1.25	5	4	1.00	2.06	1.09	4.65	0.61	0.27	1.07	32	29	35
1.50	1.25	5	4	1.50	2.11	1.11	4.68	0.62	0.28	1.07	32	29	35
1.50	1.25	5	4	16.91	2.20	1.13	5.33	0.65	0.29	1.11	32	29	35
1.50	1.25	5	5	1.00	2.04	1.09	4.40	0.62	0.27	1.10	37	32	40
1.50	1.25	5	5	1.50	2.02	1.11	4.22	0.62	0.27	1.10	37	32	40
1.50	1.25	5	5	16.91	2.20	1.16	4.96	0.67	0.28	1.15	37	33	41

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1.50	2.00	3	3	1.00	2.33	0.90	10.70	0.59	0.14	1.33	16	15	19
1.50	2.00	3	3	1.50	2.32	0.93	11.40	0.58	0.13	1.33	16	14	19
1.50	2.00	3	3	72.33	4.22	1.17	25.65	0.76	0.20	1.57	17	15	21
1.50	2.00	3	4	1.00	2.27	0.95	9.76	0.62	0.17	1.40	19	16	22
1.50	2.00	3	4	1.50	2.33	0.96	9.52	0.61	0.16	1.39	19	17	22
1.50	2.00	3	4	72.33	3.97	1.23	21.32	0.77	0.20	1.63	20	18	23
1.50	2.00	3	5	1.00	2.25	0.93	8.50	0.64	0.16	1.47	22	18	25
1.50	2.00	3	5	1.50	2.31	0.94	9.02	0.65	0.17	1.50	22	18	25
1.50	2.00	3	5	72.33	3.71	1.11	20.29	0.82	0.20	1.76	23	21	27
1.50	2.00	4	3	1.00	2.44	1.04	9.52	0.65	0.25	1.29	22	20	25
1.50	2.00	4	3	1.50	2.41	1.02	9.16	0.65	0.22	1.25	22	20	25
1.50	2.00	4	3	72.33	3.91	1.22	20.22	0.79	0.27	1.52	23	20	26
1.50	2.00	4	4	1.00	2.41	1.02	8.63	0.67	0.26	1.32	26	23	29
1.50	2.00	4	4	1.50	2.41	1.06	8.01	0.67	0.24	1.32	26	23	29
1.50	2.00	4	4	72.33	3.72	1.32	15.65	0.83	0.30	1.55	27	24	30
1.50	2.00	4	5	1.00	2.44	1.08	8.01	0.72	0.27	1.40	30	26	33
1.50	2.00	4	5	1.50	2.36	1.05	7.63	0.71	0.26	1.39	30	25	33
1.50	2.00	4	5	72.33	3.47	1.26	13.35	0.87	0.31	1.63	31	27	34
1.50	2.00	5	3	1.00	2.50	1.12	8.77	0.69	0.29	1.23	27	25	31
1.50	2.00	5	3	1.50	2.48	1.12	8.80	0.68	0.30	1.26	27	25	31
1.50	2.00	5	3	72.33	3.72	1.35	15.12	0.83	0.33	1.46	28	25	32
1.50	2.00	5	4	1.00	2.47	1.12	7.82	0.73	0.31	1.33	32	29	36
1.50	2.00	5	4	1.50	2.55	1.15	7.58	0.74	0.32	1.34	32	29	36
1.50	2.00	5	4	72.33	3.53	1.34	12.28	0.85	0.37	1.50	33	30	37
1.50	2.00	5	5	1.00	2.52	1.16	7.57	0.75	0.33	1.38	37	33	41
1.50	2.00	5	5	1.50	2.46	1.15	7.36	0.74	0.31	1.40	37	33	41
1.50	2.00	5	5	72.33	3.36	1.33	11.68	0.88	0.37	1.57	38	34	42

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
50.00	0.12	3	3	35.09	60.08	40.74	63.91	0.34	0.15	0.37	15	15	15
50.00	0.12	3	3	50.00	50.00	36.37	73.56	0.34	0.13	0.47	15	15	15
50.00	0.12	3	3	63.09	43.80	36.85	63.10	0.34	0.13	0.43	15	15	15
50.00	0.12	3	4	35.09	51.51	40.03	58.76	0.23	0.09	0.31	18	18	18
50.00	0.12	3	4	50.00	50.00	38.69	64.63	0.23	0.09	0.31	18	18	18
50.00	0.12	3	4	63.09	48.82	42.79	63.10	0.23	0.09	0.31	18	18	18
50.00	0.12	3	5	35.09	54.29	41.57	64.00	0.32	0.10	0.38	21	21	21
50.00	0.12	3	5	50.00	50.00	38.22	65.83	0.32	0.10	0.46	21	21	21
50.00	0.12	3	5	63.09	47.12	38.54	60.15	0.32	0.14	0.41	21	21	21
50.00	0.12	4	3	35.09	52.52	41.84	62.62	0.34	0.21	0.38	20	20	20
50.00	0.12	4	3	50.00	50.18	38.85	66.80	0.34	0.18	0.46	20	20	20
50.00	0.12	4	3	63.09	46.49	38.29	61.37	0.34	0.15	0.39	20	20	20
50.00	0.12	4	4	35.09	51.48	42.54	62.40	0.21	0.09	0.27	24	24	24
50.00	0.12	4	4	50.00	50.00	41.18	60.82	0.21	0.09	0.37	24	24	24
50.00	0.12	4	4	63.09	47.32	39.17	57.55	0.21	0.09	0.31	24	24	24
50.00	0.12	4	5	35.09	50.79	43.20	61.89	0.30	0.16	0.39	28	28	28
50.00	0.12	4	5	50.00	50.03	40.62	61.56	0.30	0.15	0.41	28	28	28
50.00	0.12	4	5	63.09	47.71	39.81	60.26	0.30	0.17	0.39	28	28	28
50.00	0.12	5	3	35.09	53.34	42.97	60.06	0.32	0.23	0.38	25	25	25
50.00	0.12	5	3	50.00	49.74	39.97	62.71	0.32	0.23	0.41	25	25	26
50.00	0.12	5	3	63.09	47.05	38.89	60.65	0.32	0.23	0.38	25	25	25
50.00	0.12	5	4	35.09	49.70	42.61	57.98	0.23	0.13	0.30	30	30	30
50.00	0.12	5	4	50.00	48.30	41.24	60.64	0.23	0.13	0.32	30	30	30
50.00	0.12	5	4	63.09	48.21	41.39	60.61	0.23	0.13	0.31	30	30	30
50.00	0.12	5	5	35.09	52.06	43.77	58.94	0.31	0.18	0.37	35	35	35
50.00	0.12	5	5	50.00	50.15	41.59	60.56	0.31	0.18	0.41	35	35	35
50.00	0.12	5	5	63.09	48.56	40.48	58.05	0.31	0.18	0.37	35	35	35

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
50.00	0.25	3	3	23.91	51.75	35.18	76.14	0.30	0.13	0.57	15	15	17
50.00	0.25	3	3	50.00	50.00	33.81	74.96	0.34	0.13	0.58	15	15	16
50.00	0.25	3	3	81.17	47.46	32.30	71.06	0.32	0.13	0.57	15	15	16
50.00	0.25	3	4	23.91	51.28	35.06	74.59	0.26	0.09	0.58	18	18	20
50.00	0.25	3	4	50.00	50.00	34.14	73.49	0.23	0.09	0.57	18	18	19
50.00	0.25	3	4	81.17	48.70	34.07	71.32	0.25	0.09	0.58	18	18	19
50.00	0.25	3	5	23.91	51.56	36.83	71.71	0.31	0.08	0.54	21	21	22
50.00	0.25	3	5	50.00	50.00	35.91	70.44	0.31	0.08	0.58	21	21	22
50.00	0.25	3	5	81.17	48.74	34.89	68.56	0.31	0.08	0.54	21	21	22
50.00	0.25	4	3	23.91	50.87	36.17	72.90	0.31	0.12	0.54	20	20	22
50.00	0.25	4	3	50.00	50.00	35.18	71.08	0.34	0.14	0.53	20	20	21
50.00	0.25	4	3	81.17	49.09	34.40	69.17	0.31	0.14	0.54	20	20	22
50.00	0.25	4	4	23.91	51.35	36.14	70.25	0.27	0.12	0.52	24	24	26
50.00	0.25	4	4	50.00	50.00	37.30	67.02	0.26	0.09	0.51	24	24	25
50.00	0.25	4	4	81.17	50.21	36.80	67.68	0.26	0.09	0.52	24	24	25
50.00	0.25	4	5	23.91	50.38	38.48	67.70	0.30	0.15	0.52	28	28	30
50.00	0.25	4	5	50.00	50.11	37.14	68.38	0.31	0.15	0.53	28	28	29
50.00	0.25	4	5	81.17	49.39	36.96	65.96	0.30	0.15	0.51	28	28	29
50.00	0.25	5	3	23.91	50.45	36.91	68.46	0.32	0.15	0.50	25	25	27
50.00	0.25	5	3	50.00	50.26	36.72	69.40	0.33	0.18	0.51	25	25	27
50.00	0.25	5	3	81.17	49.18	35.93	67.46	0.33	0.16	0.51	25	25	27
50.00	0.25	5	4	23.91	49.80	37.56	67.48	0.29	0.13	0.50	30	30	32
50.00	0.25	5	4	50.00	50.31	38.21	65.82	0.28	0.13	0.50	30	30	31
50.00	0.25	5	4	81.17	49.40	37.41	66.85	0.27	0.13	0.49	30	30	32
50.00	0.25	5	5	23.91	50.72	39.03	66.11	0.31	0.15	0.50	35	35	37
50.00	0.25	5	5	50.00	49.65	38.57	65.85	0.32	0.16	0.50	35	35	36
50.00	0.25	5	5	81.17	49.23	38.18	64.31	0.31	0.16	0.49	35	35	37

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
50.00	0.50	3	3	11.43	49.31	26.21	96.15	0.43	0.13	0.89	16	15	18
50.00	0.50	3	3	50.00	50.00	24.98	97.89	0.42	0.13	0.86	16	15	17
50.00	0.50	3	3	131.76	50.54	26.03	97.53	0.42	0.13	0.86	16	15	18
50.00	0.50	3	4	11.43	49.64	26.83	92.03	0.42	0.09	0.86	19	18	21
50.00	0.50	3	4	50.00	50.00	26.71	93.62	0.42	0.09	0.87	19	18	20
50.00	0.50	3	4	131.76	49.69	28.27	91.83	0.42	0.09	0.86	19	18	21
50.00	0.50	3	5	11.43	49.86	27.51	86.26	0.43	0.12	0.85	22	21	24
50.00	0.50	3	5	50.00	49.93	27.93	86.87	0.42	0.10	0.83	21	21	23
50.00	0.50	3	5	131.76	50.17	27.87	90.13	0.42	0.13	0.85	22	21	24
50.00	0.50	4	3	11.43	49.61	27.33	87.76	0.44	0.18	0.80	21	20	24
50.00	0.50	4	3	50.00	50.00	28.12	90.09	0.44	0.17	0.79	21	20	23
50.00	0.50	4	3	131.76	50.53	28.82	89.33	0.43	0.17	0.80	21	20	23
50.00	0.50	4	4	11.43	49.50	29.27	83.28	0.44	0.15	0.80	25	24	27
50.00	0.50	4	4	50.00	50.00	28.78	86.28	0.45	0.19	0.80	25	24	27
50.00	0.50	4	4	131.76	50.28	29.83	86.95	0.45	0.18	0.79	25	24	27
50.00	0.50	4	5	11.43	49.43	30.74	79.24	0.44	0.17	0.81	29	28	31
50.00	0.50	4	5	50.00	50.40	30.40	84.48	0.44	0.17	0.79	29	28	31
50.00	0.50	4	5	131.76	51.04	30.71	83.68	0.44	0.17	0.79	29	28	31
50.00	0.50	5	3	11.43	49.77	29.79	83.03	0.46	0.23	0.76	27	25	29
50.00	0.50	5	3	50.00	49.86	29.35	84.53	0.45	0.23	0.76	26	25	28
50.00	0.50	5	3	131.76	49.88	29.69	84.54	0.46	0.23	0.76	26	25	29
50.00	0.50	5	4	11.43	49.93	31.20	79.95	0.46	0.19	0.77	32	30	34
50.00	0.50	5	4	50.00	49.94	30.39	80.05	0.45	0.19	0.75	31	30	33
50.00	0.50	5	4	131.76	49.80	30.30	80.93	0.46	0.20	0.77	31	30	34
50.00	0.50	5	5	11.43	49.47	31.79	77.96	0.46	0.22	0.78	37	35	39
50.00	0.50	5	5	50.00	49.77	32.55	78.55	0.45	0.21	0.75	36	35	38
50.00	0.50	5	5	131.76	50.61	32.57	78.28	0.46	0.21	0.76	36	35	38

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
50.00	1.25	3	3	1.25	32.75	8.00	154.80	0.72	0.17	1.45	17	15	20
50.00	1.25	3	3	50.00	50.22	13.49	192.27	0.64	0.15	1.35	16	15	19
50.00	1.25	3	3	563.63	66.29	16.23	266.03	0.68	0.17	1.49	17	15	20
50.00	1.25	3	4	1.25	35.52	9.83	140.26	0.73	0.21	1.59	20	18	24
50.00	1.25	3	4	50.00	49.73	14.11	179.37	0.67	0.18	1.41	19	18	22
50.00	1.25	3	4	563.63	64.53	16.90	245.35	0.69	0.21	1.47	20	18	23
50.00	1.25	3	5	1.25	36.51	11.11	135.03	0.75	0.20	1.58	23	21	27
50.00	1.25	3	5	50.00	49.05	14.96	167.10	0.69	0.18	1.49	22	21	25
50.00	1.25	3	5	563.63	61.25	18.25	209.64	0.74	0.19	1.57	23	21	26
50.00	1.25	4	3	1.25	35.85	10.56	136.33	0.75	0.28	1.41	23	20	27
50.00	1.25	4	3	50.00	51.38	14.92	167.37	0.67	0.26	1.32	22	20	25
50.00	1.25	4	3	563.63	63.22	17.33	215.78	0.74	0.27	1.33	22	20	26
50.00	1.25	4	4	1.25	38.55	12.58	128.59	0.80	0.28	1.44	27	24	31
50.00	1.25	4	4	50.00	50.87	16.40	158.99	0.72	0.29	1.34	26	24	29
50.00	1.25	4	4	563.63	62.86	19.57	191.92	0.77	0.29	1.45	26	24	30
50.00	1.25	4	5	1.25	40.67	13.10	114.57	0.79	0.30	1.46	31	28	34
50.00	1.25	4	5	50.00	49.50	16.87	141.17	0.74	0.28	1.40	30	28	33
50.00	1.25	4	5	563.63	59.44	19.91	177.98	0.79	0.29	1.47	30	28	34
50.00	1.25	5	3	1.25	38.49	12.39	125.21	0.78	0.35	1.36	28	26	32
50.00	1.25	5	3	50.00	50.79	16.74	152.49	0.71	0.32	1.27	27	25	31
50.00	1.25	5	3	563.63	59.47	19.16	178.10	0.76	0.34	1.33	28	26	32
50.00	1.25	5	4	1.25	41.05	14.75	120.60	0.80	0.37	1.38	33	31	37
50.00	1.25	5	4	50.00	50.70	18.37	145.68	0.76	0.33	1.34	32	30	36
50.00	1.25	5	4	563.63	57.79	20.25	161.07	0.78	0.35	1.35	33	30	37
50.00	1.25	5	5	1.25	41.74	15.60	115.73	0.83	0.37	1.45	38	36	42
50.00	1.25	5	5	50.00	50.69	19.36	138.07	0.78	0.36	1.35	37	35	41
50.00	1.25	5	5	563.63	58.75	21.82	153.79	0.81	0.37	1.40	38	35	42

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
50.00	2.00	3	3	1.00	21.84	3.87	166.77	0.82	0.21	1.78	17	15	21
50.00	2.00	3	3	50.00	50.71	7.86	321.77	0.73	0.17	1.60	17	15	20
50.00	2.00	3	3	2411.09	128.75	14.09	793.07	0.87	0.19	1.93	18	15	21
50.00	2.00	3	4	1.00	24.66	4.87	164.89	0.87	0.23	1.94	20	18	24
50.00	2.00	3	4	50.00	49.91	9.09	283.46	0.76	0.23	1.67	20	18	23
50.00	2.00	3	4	2411.09	116.17	15.77	696.88	0.92	0.24	2.02	21	18	24
50.00	2.00	3	5	1.00	27.83	5.36	160.56	0.89	0.24	1.98	23	21	27
50.00	2.00	3	5	50.00	49.95	8.96	267.23	0.81	0.20	1.75	23	21	26
50.00	2.00	3	5	2411.09	100.93	15.52	571.19	0.97	0.27	2.12	24	21	27
50.00	2.00	4	3	1.00	27.90	5.29	167.64	0.89	0.31	1.74	23	20	27
50.00	2.00	4	3	50.00	52.30	9.39	286.83	0.79	0.28	1.54	22	20	26
50.00	2.00	4	3	2411.09	106.15	16.02	567.69	0.94	0.32	1.81	23	21	28
50.00	2.00	4	4	1.00	29.48	5.62	160.11	0.95	0.32	1.80	27	24	31
50.00	2.00	4	4	50.00	50.11	9.79	250.38	0.85	0.33	1.61	26	24	30
50.00	2.00	4	4	2411.09	95.52	16.28	473.55	0.99	0.35	1.89	27	24	31
50.00	2.00	4	5	1.00	31.08	6.78	166.23	1.01	0.38	1.90	31	28	35
50.00	2.00	4	5	50.00	51.32	11.24	229.46	0.92	0.34	1.74	30	28	34
50.00	2.00	4	5	2411.09	86.12	17.54	411.71	1.04	0.37	1.97	31	29	35
50.00	2.00	5	3	1.00	31.80	7.36	177.65	0.95	0.40	1.65	29	26	33
50.00	2.00	5	3	50.00	50.68	10.70	245.35	0.85	0.38	1.58	28	25	32
50.00	2.00	5	3	2411.09	89.57	15.85	451.95	1.00	0.43	1.76	29	26	33
50.00	2.00	5	4	1.00	33.82	7.35	160.54	1.01	0.45	1.75	34	31	38
50.00	2.00	5	4	50.00	52.59	11.52	238.42	0.89	0.39	1.60	33	30	37
50.00	2.00	5	4	2411.09	80.43	17.29	372.20	1.04	0.43	1.81	34	31	38
50.00	2.00	5	5	1.00	34.22	8.34	155.68	1.05	0.48	1.79	38	36	43
50.00	2.00	5	5	50.00	49.72	13.17	208.13	0.97	0.42	1.70	38	35	42
50.00	2.00	5	5	2411.09	76.39	17.89	324.54	1.09	0.51	1.89	39	36	43

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
250.00	0.12	3	3	175.45	300.41	203.25	326.36	0.34	0.15	0.37	15	15	15
250.00	0.12	3	3	250.00	249.98	173.53	367.76	0.34	0.13	0.47	15	15	15
250.00	0.12	3	3	315.45	229.66	184.24	315.43	0.34	0.13	0.43	15	15	15
250.00	0.12	3	4	175.45	257.55	200.17	293.82	0.23	0.09	0.31	18	18	18
250.00	0.12	3	4	250.00	249.98	193.40	323.10	0.23	0.09	0.31	18	18	18
250.00	0.12	3	4	315.45	244.04	189.24	315.43	0.23	0.09	0.31	18	18	18
250.00	0.12	3	5	175.45	274.24	207.84	320.17	0.32	0.10	0.38	21	21	21
250.00	0.12	3	5	250.00	249.98	190.29	327.08	0.32	0.10	0.46	21	21	21
250.00	0.12	3	5	315.45	236.02	192.65	296.77	0.32	0.10	0.38	21	21	21
250.00	0.12	4	3	175.45	262.62	209.20	313.66	0.34	0.21	0.37	20	20	20
250.00	0.12	4	3	250.00	249.98	190.28	328.70	0.34	0.15	0.46	20	20	20
250.00	0.12	4	3	315.45	232.43	192.86	310.38	0.33	0.19	0.39	20	20	20
250.00	0.12	4	4	175.45	257.41	212.71	312.03	0.21	0.09	0.27	24	24	24
250.00	0.12	4	4	250.00	249.98	205.51	303.55	0.21	0.09	0.37	24	24	24
250.00	0.12	4	4	315.45	236.54	195.46	287.72	0.21	0.12	0.31	24	24	24
250.00	0.12	4	5	175.45	253.98	216.02	309.41	0.30	0.17	0.39	28	28	28
250.00	0.12	4	5	250.00	249.82	203.05	307.75	0.30	0.16	0.41	28	28	28
250.00	0.12	4	5	315.45	236.93	200.98	301.23	0.30	0.16	0.39	28	28	28
250.00	0.12	5	3	175.45	266.73	214.87	302.65	0.32	0.23	0.37	25	25	25
250.00	0.12	5	3	250.00	251.38	199.55	309.13	0.32	0.23	0.41	25	25	26
250.00	0.12	5	3	315.45	234.41	194.42	306.38	0.31	0.22	0.40	25	25	25
250.00	0.12	5	4	175.45	248.20	212.78	290.30	0.23	0.13	0.29	30	30	30
250.00	0.12	5	4	250.00	242.32	206.14	303.13	0.23	0.13	0.32	30	30	30
250.00	0.12	5	4	315.45	241.01	206.90	302.38	0.23	0.13	0.29	30	30	30
250.00	0.12	5	5	175.45	258.37	218.94	294.49	0.31	0.18	0.37	35	35	35
250.00	0.12	5	5	250.00	250.44	207.89	300.70	0.31	0.17	0.41	35	35	35
250.00	0.12	5	5	315.45	241.66	202.38	285.80	0.31	0.18	0.37	35	35	35

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
250.00	0.25	3	3	119.55	258.78	175.90	380.72	0.32	0.13	0.57	15	15	17
250.00	0.25	3	3	250.00	249.98	166.37	387.08	0.34	0.13	0.58	15	15	16
250.00	0.25	3	3	405.83	237.26	161.19	356.13	0.32	0.13	0.57	15	15	16
250.00	0.25	3	4	119.55	256.42	175.50	373.25	0.26	0.09	0.58	18	18	20
250.00	0.25	3	4	250.00	249.98	170.70	366.08	0.23	0.09	0.56	18	18	19
250.00	0.25	3	4	405.83	243.45	172.22	357.33	0.26	0.09	0.58	18	18	19
250.00	0.25	3	5	119.55	257.74	181.76	346.83	0.31	0.08	0.54	21	21	22
250.00	0.25	3	5	250.00	249.98	178.40	350.28	0.31	0.08	0.58	21	21	22
250.00	0.25	3	5	405.83	244.26	176.66	345.77	0.31	0.08	0.54	21	21	22
250.00	0.25	4	3	119.55	255.30	184.29	358.59	0.31	0.12	0.51	20	20	22
250.00	0.25	4	3	250.00	249.98	175.86	355.34	0.34	0.15	0.54	20	20	21
250.00	0.25	4	3	405.83	241.98	175.60	343.98	0.31	0.14	0.52	20	20	22
250.00	0.25	4	4	119.55	254.01	176.30	350.71	0.27	0.12	0.53	24	24	26
250.00	0.25	4	4	250.00	249.98	186.49	335.07	0.26	0.09	0.51	24	24	25
250.00	0.25	4	4	405.83	251.03	184.19	343.81	0.26	0.09	0.52	24	24	25
250.00	0.25	4	5	119.55	253.52	187.83	336.01	0.30	0.12	0.52	28	28	30
250.00	0.25	4	5	250.00	248.76	184.64	334.64	0.31	0.15	0.52	28	28	29
250.00	0.25	4	5	405.83	246.92	184.00	329.82	0.30	0.13	0.51	28	28	29
250.00	0.25	5	3	119.55	254.49	188.11	343.07	0.32	0.15	0.50	25	25	27
250.00	0.25	5	3	250.00	251.88	184.58	343.20	0.33	0.18	0.52	25	25	27
250.00	0.25	5	3	405.83	245.63	181.15	331.39	0.33	0.16	0.52	25	25	27
250.00	0.25	5	4	119.55	248.69	186.94	336.98	0.28	0.13	0.49	30	30	32
250.00	0.25	5	4	250.00	251.82	190.48	328.06	0.28	0.13	0.49	30	30	32
250.00	0.25	5	4	405.83	246.96	187.57	334.63	0.27	0.13	0.50	30	30	32
250.00	0.25	5	5	119.55	252.61	196.28	327.96	0.31	0.15	0.49	35	35	37
250.00	0.25	5	5	250.00	249.57	192.34	323.23	0.32	0.16	0.50	35	35	36
250.00	0.25	5	5	405.83	248.60	192.23	318.62	0.31	0.15	0.49	35	35	37

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
250.00	0.50	3	3	57.17	246.85	124.47	488.00	0.43	0.13	0.89	16	15	18
250.00	0.50	3	3	250.00	249.98	125.47	497.11	0.43	0.13	0.86	15	15	17
250.00	0.50	3	3	658.80	255.84	129.72	488.79	0.42	0.13	0.84	16	15	18
250.00	0.50	3	4	57.17	247.68	137.26	457.35	0.42	0.09	0.85	19	18	21
250.00	0.50	3	4	250.00	249.98	136.86	469.24	0.42	0.09	0.85	18	18	20
250.00	0.50	3	4	658.80	253.08	135.56	460.44	0.42	0.09	0.84	19	18	21
250.00	0.50	3	5	57.17	246.98	139.02	446.74	0.44	0.10	0.84	22	21	24
250.00	0.50	3	5	250.00	247.22	137.00	431.84	0.43	0.12	0.86	21	21	23
250.00	0.50	3	5	658.80	250.17	143.11	428.87	0.43	0.10	0.84	22	21	24
250.00	0.50	4	3	57.17	248.05	136.29	442.11	0.44	0.17	0.79	21	20	24
250.00	0.50	4	3	250.00	248.45	138.88	440.55	0.44	0.18	0.79	21	20	23
250.00	0.50	4	3	658.80	253.45	136.51	442.36	0.43	0.17	0.79	21	20	23
250.00	0.50	4	4	57.17	251.52	148.02	435.08	0.46	0.17	0.80	25	24	28
250.00	0.50	4	4	250.00	250.98	150.95	426.45	0.44	0.19	0.80	25	24	27
250.00	0.50	4	4	658.80	249.27	151.18	430.41	0.46	0.19	0.81	25	24	27
250.00	0.50	4	5	57.17	246.94	148.42	398.39	0.45	0.17	0.80	29	28	31
250.00	0.50	4	5	250.00	249.84	157.96	410.20	0.44	0.17	0.79	29	28	31
250.00	0.50	4	5	658.80	252.43	153.16	411.72	0.44	0.19	0.81	29	28	31
250.00	0.50	5	3	57.17	245.18	150.92	411.53	0.46	0.23	0.77	27	25	29
250.00	0.50	5	3	250.00	252.49	149.78	416.45	0.47	0.23	0.77	26	25	29
250.00	0.50	5	3	658.80	250.40	149.83	425.00	0.45	0.22	0.76	26	25	29
250.00	0.50	5	4	57.17	249.44	154.47	404.72	0.46	0.20	0.76	32	30	34
250.00	0.50	5	4	250.00	248.42	155.63	395.07	0.45	0.20	0.77	31	30	33
250.00	0.50	5	4	658.80	248.87	154.99	399.97	0.46	0.20	0.76	31	30	34
250.00	0.50	5	5	57.17	249.29	161.80	391.40	0.46	0.21	0.77	37	35	39
250.00	0.50	5	5	250.00	248.35	157.09	390.03	0.46	0.22	0.75	36	35	38
250.00	0.50	5	5	658.80	249.25	161.23	387.49	0.45	0.21	0.76	36	35	38

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
250.00	1.25	3	3	6.25	164.74	37.29	714.49	0.72	0.17	1.55	18	15	21
250.00	1.25	3	3	250.00	247.53	66.41	955.19	0.63	0.15	1.35	16	15	19
250.00	1.25	3	3	2818.17	345.07	87.38	1288.15	0.64	0.16	1.40	17	15	20
250.00	1.25	3	4	6.25	169.71	48.18	694.23	0.72	0.21	1.57	21	18	24
250.00	1.25	3	4	250.00	254.37	72.68	879.56	0.67	0.15	1.44	19	18	22
250.00	1.25	3	4	2818.17	331.06	85.24	1154.21	0.69	0.18	1.45	20	18	23
250.00	1.25	3	5	6.25	185.01	52.04	629.03	0.76	0.20	1.62	24	21	27
250.00	1.25	3	5	250.00	251.83	75.01	782.41	0.69	0.19	1.44	22	21	25
250.00	1.25	3	5	2818.17	323.76	94.64	1002.32	0.74	0.20	1.55	23	21	26
250.00	1.25	4	3	6.25	186.12	53.65	661.09	0.77	0.28	1.43	23	21	27
250.00	1.25	4	3	250.00	252.10	77.31	796.38	0.69	0.26	1.28	22	20	25
250.00	1.25	4	3	2818.17	311.91	84.69	999.62	0.72	0.27	1.32	22	20	26
250.00	1.25	4	4	6.25	181.85	53.85	588.29	0.77	0.31	1.48	27	25	31
250.00	1.25	4	4	250.00	247.42	83.23	733.63	0.72	0.29	1.33	26	24	29
250.00	1.25	4	4	2818.17	299.35	94.02	909.10	0.73	0.28	1.35	26	24	30
250.00	1.25	4	5	6.25	203.71	65.71	588.09	0.82	0.30	1.52	31	29	35
250.00	1.25	4	5	250.00	247.36	86.56	703.22	0.76	0.29	1.39	30	28	33
250.00	1.25	4	5	2818.17	289.84	102.30	828.31	0.77	0.27	1.43	30	28	34
250.00	1.25	5	3	6.25	195.25	60.49	589.86	0.80	0.35	1.40	29	26	33
250.00	1.25	5	3	250.00	250.38	85.06	734.67	0.72	0.33	1.27	27	25	31
250.00	1.25	5	3	2818.17	297.97	101.39	819.59	0.75	0.34	1.28	28	25	32
250.00	1.25	5	4	6.25	202.84	71.26	571.86	0.82	0.37	1.42	34	31	38
250.00	1.25	5	4	250.00	249.93	92.09	672.95	0.74	0.35	1.29	32	30	36
250.00	1.25	5	4	2818.17	293.39	97.19	855.34	0.77	0.35	1.32	33	30	37
250.00	1.25	5	5	6.25	215.91	79.52	573.53	0.86	0.37	1.43	39	36	43
250.00	1.25	5	5	250.00	242.43	93.85	610.27	0.78	0.36	1.35	37	35	41
250.00	1.25	5	5	2818.17	284.01	106.13	718.35	0.81	0.36	1.38	38	35	42

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
250.00	2.00	3	3	1.00	88.79	10.76	749.96	0.91	0.21	2.06	18	15	22
250.00	2.00	3	3	250.00	250.00	41.47	1375.87	0.72	0.17	1.51	17	15	20
250.00	2.00	3	3	5000.00	437.80	63.55	2161.44	0.77	0.17	1.67	17	15	20
250.00	2.00	3	4	1.00	99.94	13.97	674.93	0.95	0.26	2.08	21	18	25
250.00	2.00	3	4	250.00	237.91	43.96	1324.22	0.76	0.22	1.67	20	18	23
250.00	2.00	3	4	5000.00	399.38	58.80	1881.63	0.79	0.21	1.80	20	18	23
250.00	2.00	3	5	1.00	105.58	16.54	709.06	1.04	0.28	2.19	24	21	28
250.00	2.00	3	5	250.00	245.28	47.56	1200.09	0.81	0.21	1.76	23	21	26
250.00	2.00	3	5	5000.00	390.51	68.20	1635.89	0.84	0.21	1.81	23	21	26
250.00	2.00	4	3	1.00	108.16	16.81	652.29	0.99	0.36	1.96	24	21	28
250.00	2.00	4	3	250.00	241.68	44.37	1145.40	0.79	0.28	1.54	22	20	26
250.00	2.00	4	3	5000.00	374.03	67.58	1593.61	0.83	0.30	1.65	23	20	27
250.00	2.00	4	4	1.00	119.81	21.81	648.73	1.05	0.38	2.02	28	25	32
250.00	2.00	4	4	250.00	249.95	49.44	1104.20	0.85	0.32	1.60	26	24	30
250.00	2.00	4	4	5000.00	362.13	71.07	1457.67	0.89	0.33	1.69	27	24	30
250.00	2.00	4	5	1.00	131.80	25.58	664.90	1.07	0.38	2.04	32	29	36
250.00	2.00	4	5	250.00	255.08	53.06	1028.73	0.89	0.32	1.70	30	28	34
250.00	2.00	4	5	5000.00	349.72	69.47	1326.01	0.94	0.37	1.75	31	28	34
250.00	2.00	5	3	1.00	125.62	22.53	648.59	1.03	0.46	1.82	29	26	34
250.00	2.00	5	3	250.00	231.46	51.07	1014.00	0.85	0.37	1.50	28	25	32
250.00	2.00	5	3	5000.00	337.68	68.33	1381.27	0.89	0.38	1.58	28	25	33
250.00	2.00	5	4	1.00	134.20	26.42	595.83	1.06	0.46	1.88	34	31	39
250.00	2.00	5	4	250.00	244.71	56.27	972.75	0.92	0.40	1.60	33	30	37
250.00	2.00	5	4	5000.00	312.91	73.61	1262.54	0.95	0.42	1.63	33	30	37
250.00	2.00	5	5	1.00	142.54	33.69	631.28	1.12	0.51	1.97	39	36	44
250.00	2.00	5	5	250.00	242.50	59.88	902.35	0.95	0.42	1.68	38	35	42
250.00	2.00	5	5	5000.00	313.69	71.65	1108.21	1.00	0.45	1.74	38	35	43

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1500.00	0.12	3	3	1052.70	1863.40	1249.15	2218.29	0.37	0.16	0.43	15	15	15
1500.00	0.12	3	3	1500.00	1553.75	1071.79	2366.02	0.38	0.14	0.46	15	15	15
1500.00	0.12	3	3	1892.72	1313.94	1105.58	2055.10	0.34	0.14	0.42	15	15	15
1500.00	0.12	3	4	1052.70	1698.28	1315.75	1958.95	0.27	0.10	0.34	18	18	18
1500.00	0.12	3	4	1500.00	1630.90	1162.66	1995.40	0.29	0.09	0.40	18	18	18
1500.00	0.12	3	4	1892.72	1471.37	1220.70	1872.20	0.28	0.09	0.35	18	18	18
1500.00	0.12	3	5	1052.70	1789.99	1325.90	2155.66	0.33	0.18	0.48	21	21	21
1500.00	0.12	3	5	1500.00	1529.75	1149.29	1962.29	0.36	0.10	0.45	21	21	21
1500.00	0.12	3	5	1892.72	1396.67	1228.74	1797.44	0.40	0.13	0.43	21	21	21
1500.00	0.12	4	3	1052.70	1699.46	1277.62	2013.90	0.37	0.24	0.42	20	20	20
1500.00	0.12	4	3	1500.00	1610.18	1170.32	2013.45	0.35	0.20	0.45	20	20	20
1500.00	0.12	4	3	1892.72	1527.31	1220.73	1961.89	0.31	0.14	0.40	20	20	21
1500.00	0.12	4	4	1052.70	1649.99	1352.19	1937.42	0.26	0.13	0.35	24	24	24
1500.00	0.12	4	4	1500.00	1539.16	1248.57	1864.55	0.26	0.12	0.37	24	24	24
1500.00	0.12	4	4	1892.72	1565.29	1266.31	1833.77	0.23	0.09	0.36	24	24	24
1500.00	0.12	4	5	1052.70	1662.26	1321.84	1965.89	0.34	0.19	0.41	28	28	28
1500.00	0.12	4	5	1500.00	1580.92	1236.47	1868.86	0.34	0.17	0.45	28	28	28
1500.00	0.12	4	5	1892.72	1557.08	1227.76	1843.92	0.33	0.13	0.41	28	28	28
1500.00	0.12	5	3	1052.70	1662.49	1307.98	2111.94	0.34	0.24	0.41	25	25	25
1500.00	0.12	5	3	1500.00	1569.11	1204.46	1802.43	0.33	0.21	0.39	25	25	25
1500.00	0.12	5	3	1892.72	1566.93	1197.99	1802.43	0.33	0.23	0.39	25	25	26
1500.00	0.12	5	4	1052.70	1627.09	1356.00	1907.41	0.24	0.17	0.33	30	30	30
1500.00	0.12	5	4	1500.00	1556.99	1283.80	1786.68	0.24	0.11	0.32	30	30	30
1500.00	0.12	5	4	1892.72	1523.66	1278.78	1765.91	0.23	0.11	0.32	30	30	30
1500.00	0.12	5	5	1052.70	1678.16	1341.61	1946.91	0.33	0.21	0.41	35	35	35
1500.00	0.12	5	5	1500.00	1556.15	1298.41	1785.15	0.32	0.18	0.40	35	35	35
1500.00	0.12	5	5	1892.72	1548.11	1296.04	1785.15	0.32	0.18	0.39	35	35	35

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1500.00	0.25	3	3	717.30	1523.74	1054.81	2227.85	0.33	0.12	0.56	15	15	16
1500.00	0.25	3	3	1500.00	1523.30	982.77	2243.31	0.36	0.12	0.57	15	15	16
1500.00	0.25	3	3	2434.99	1439.64	999.86	2092.97	0.34	0.12	0.56	15	15	16
1500.00	0.25	3	4	717.30	1494.28	1067.96	2102.17	0.27	0.10	0.55	18	18	19
1500.00	0.25	3	4	1500.00	1507.37	1052.34	2118.86	0.26	0.09	0.55	18	18	19
1500.00	0.25	3	4	2434.99	1493.43	1070.56	2108.48	0.26	0.09	0.55	18	18	19
1500.00	0.25	3	5	717.30	1550.09	1071.15	2072.40	0.31	0.06	0.53	21	21	22
1500.00	0.25	3	5	1500.00	1505.26	1075.27	2106.35	0.32	0.07	0.55	21	21	22
1500.00	0.25	3	5	2434.99	1466.00	1044.79	2019.61	0.31	0.06	0.53	21	21	22
1500.00	0.25	4	3	717.30	1540.31	1088.25	2110.23	0.32	0.13	0.51	20	20	22
1500.00	0.25	4	3	1500.00	1504.79	1071.63	2131.26	0.34	0.15	0.53	20	20	21
1500.00	0.25	4	3	2434.99	1490.48	1048.74	2062.02	0.33	0.14	0.52	20	20	22
1500.00	0.25	4	4	717.30	1525.66	1117.61	2035.61	0.27	0.11	0.51	24	24	26
1500.00	0.25	4	4	1500.00	1516.41	1111.62	2035.58	0.27	0.10	0.50	24	24	25
1500.00	0.25	4	4	2434.99	1489.93	1089.87	1994.21	0.27	0.10	0.50	24	24	25
1500.00	0.25	4	5	717.30	1525.29	1161.01	1977.67	0.31	0.13	0.50	28	28	30
1500.00	0.25	4	5	1500.00	1521.55	1126.64	2012.80	0.33	0.15	0.52	28	28	29
1500.00	0.25	4	5	2434.99	1477.33	1116.97	1947.09	0.31	0.13	0.51	28	28	29
1500.00	0.25	5	3	717.30	1524.66	1135.87	2012.16	0.33	0.15	0.49	25	25	27
1500.00	0.25	5	3	1500.00	1487.42	1093.92	1967.70	0.33	0.15	0.50	25	25	27
1500.00	0.25	5	3	2434.99	1491.15	1096.52	2014.48	0.33	0.16	0.50	25	25	27
1500.00	0.25	5	4	717.30	1519.97	1151.06	1973.17	0.28	0.12	0.47	30	30	32
1500.00	0.25	5	4	1500.00	1501.10	1147.24	1948.65	0.28	0.13	0.47	30	30	32
1500.00	0.25	5	4	2434.99	1513.16	1136.51	1926.47	0.27	0.12	0.47	30	30	32
1500.00	0.25	5	5	717.30	1525.21	1174.37	1962.95	0.31	0.16	0.48	35	35	37
1500.00	0.25	5	5	1500.00	1486.02	1154.82	1916.32	0.32	0.16	0.48	35	35	36
1500.00	0.25	5	5	2434.99	1483.14	1146.39	1878.80	0.32	0.16	0.48	35	35	36

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1500.00	0.50	3	3	343.02	1471.04	748.89	2685.37	0.42	0.14	0.83	16	15	18
1500.00	0.50	3	3	1500.00	1490.21	765.00	2753.17	0.41	0.13	0.83	15	15	17
1500.00	0.50	3	3	3952.77	1454.18	768.97	2714.86	0.42	0.13	0.82	16	15	17
1500.00	0.50	3	4	343.02	1496.51	804.54	2630.15	0.40	0.10	0.82	19	18	21
1500.00	0.50	3	4	1500.00	1476.31	802.49	2606.34	0.40	0.10	0.81	18	18	20
1500.00	0.50	3	4	3952.77	1472.67	815.74	2640.36	0.40	0.10	0.82	19	18	20
1500.00	0.50	3	5	343.02	1482.52	835.84	2590.74	0.41	0.11	0.86	22	21	24
1500.00	0.50	3	5	1500.00	1481.18	847.98	2536.61	0.41	0.10	0.81	21	21	23
1500.00	0.50	3	5	3952.77	1477.28	836.85	2569.13	0.39	0.12	0.82	22	21	23
1500.00	0.50	4	3	343.02	1458.55	863.67	2531.22	0.42	0.16	0.77	21	20	23
1500.00	0.50	4	3	1500.00	1468.40	838.29	2528.95	0.43	0.17	0.77	21	20	23
1500.00	0.50	4	3	3952.77	1469.72	842.82	2526.95	0.42	0.15	0.76	21	20	23
1500.00	0.50	4	4	343.02	1488.00	878.54	2431.96	0.43	0.15	0.79	25	24	27
1500.00	0.50	4	4	1500.00	1503.65	860.42	2473.28	0.42	0.14	0.77	25	24	27
1500.00	0.50	4	4	3952.77	1482.11	881.29	2418.16	0.44	0.15	0.78	25	24	27
1500.00	0.50	4	5	343.02	1464.69	896.39	2397.81	0.44	0.18	0.80	29	28	31
1500.00	0.50	4	5	1500.00	1501.25	902.07	2376.90	0.43	0.17	0.77	29	28	31
1500.00	0.50	4	5	3952.77	1485.19	925.55	2368.60	0.43	0.18	0.78	29	28	31
1500.00	0.50	5	3	343.02	1472.71	906.01	2450.88	0.44	0.22	0.72	26	25	29
1500.00	0.50	5	3	1500.00	1482.45	892.22	2406.31	0.44	0.22	0.73	26	25	28
1500.00	0.50	5	3	3952.77	1479.19	884.86	2369.85	0.44	0.22	0.73	26	25	28
1500.00	0.50	5	4	343.02	1481.37	934.97	2339.10	0.45	0.19	0.74	31	30	34
1500.00	0.50	5	4	1500.00	1479.30	920.90	2345.76	0.44	0.19	0.72	31	30	33
1500.00	0.50	5	4	3952.77	1490.80	929.99	2327.59	0.44	0.19	0.74	31	30	33
1500.00	0.50	5	5	343.02	1476.48	963.62	2264.98	0.44	0.20	0.73	36	35	39
1500.00	0.50	5	5	1500.00	1477.91	963.30	2236.80	0.44	0.21	0.73	36	35	38
1500.00	0.50	5	5	3952.77	1482.24	970.00	2265.22	0.44	0.21	0.71	36	35	38

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1500.00	1.25	3	3	37.51	899.56	227.29	3075.48	0.68	0.17	1.46	18	15	21
1500.00	1.25	3	3	1500.00	1401.94	407.57	3676.97	0.57	0.14	1.22	16	15	19
1500.00	1.25	3	3	5000.00	1550.58	445.94	4008.40	0.56	0.15	1.23	16	15	19
1500.00	1.25	3	4	37.51	997.18	263.77	3018.59	0.69	0.18	1.47	21	18	24
1500.00	1.25	3	4	1500.00	1370.77	410.78	3643.68	0.60	0.17	1.27	19	18	22
1500.00	1.25	3	4	5000.00	1486.70	449.69	3647.49	0.60	0.15	1.29	19	18	22
1500.00	1.25	3	5	37.51	1034.21	297.39	2892.91	0.70	0.18	1.49	23	21	26
1500.00	1.25	3	5	1500.00	1339.92	456.05	3440.27	0.62	0.17	1.30	22	21	25
1500.00	1.25	3	5	5000.00	1423.85	466.77	3576.90	0.62	0.17	1.33	22	21	25
1500.00	1.25	4	3	37.51	983.58	303.80	2772.08	0.73	0.27	1.32	23	20	26
1500.00	1.25	4	3	1500.00	1331.40	457.30	3294.99	0.63	0.24	1.19	22	20	25
1500.00	1.25	4	3	5000.00	1461.21	483.44	3468.04	0.63	0.24	1.17	22	20	25
1500.00	1.25	4	4	37.51	1079.51	339.97	2780.06	0.72	0.27	1.37	27	24	30
1500.00	1.25	4	4	1500.00	1365.96	458.15	3243.62	0.66	0.25	1.21	26	24	29
1500.00	1.25	4	4	5000.00	1428.71	528.90	3357.76	0.65	0.26	1.20	26	24	29
1500.00	1.25	4	5	37.51	1095.90	390.14	2758.26	0.74	0.28	1.41	31	28	34
1500.00	1.25	4	5	1500.00	1383.67	498.68	3040.28	0.69	0.26	1.22	30	27	32
1500.00	1.25	4	5	5000.00	1411.04	530.45	3161.62	0.68	0.25	1.22	30	28	33
1500.00	1.25	5	3	37.51	1068.65	362.33	2746.96	0.74	0.33	1.25	29	26	32
1500.00	1.25	5	3	1500.00	1386.87	512.68	3099.90	0.65	0.30	1.15	27	25	31
1500.00	1.25	5	3	5000.00	1400.91	511.10	3233.64	0.65	0.29	1.13	27	25	31
1500.00	1.25	5	4	37.51	1085.29	408.66	2605.68	0.76	0.33	1.30	33	31	37
1500.00	1.25	5	4	1500.00	1358.01	529.27	3012.43	0.68	0.30	1.16	32	30	35
1500.00	1.25	5	4	5000.00	1381.90	516.78	2955.98	0.68	0.31	1.17	32	30	35
1500.00	1.25	5	5	37.51	1155.59	450.50	2560.42	0.76	0.34	1.30	38	35	42
1500.00	1.25	5	5	1500.00	1405.15	570.30	2817.08	0.71	0.32	1.21	37	35	40
1500.00	1.25	5	5	5000.00	1396.01	551.35	2852.02	0.71	0.31	1.20	37	35	40

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
1500.00	2.00	3	3	4.10	413.81	48.02	2571.45	0.93	0.24	2.06	19	16	22
1500.00	2.00	3	3	1500.00	1246.35	221.95	3997.86	0.63	0.16	1.42	16	15	19
1500.00	2.00	3	3	5000.00	1391.29	273.72	4249.04	0.64	0.16	1.43	16	15	20
1500.00	2.00	3	4	4.10	467.50	69.61	2685.63	0.96	0.26	2.12	22	19	25
1500.00	2.00	3	4	1500.00	1316.22	251.17	4115.95	0.68	0.17	1.52	19	17	23
1500.00	2.00	3	4	5000.00	1379.14	287.40	4126.50	0.68	0.17	1.51	19	18	22
1500.00	2.00	3	5	4.10	520.51	86.05	2379.19	1.00	0.27	2.18	24	21	28
1500.00	2.00	3	5	1500.00	1242.74	269.92	3684.77	0.73	0.20	1.60	22	19	25
1500.00	2.00	3	5	5000.00	1388.35	286.52	3968.39	0.71	0.19	1.56	22	19	25
1500.00	2.00	4	3	4.10	516.50	76.59	2403.98	0.99	0.36	1.92	24	21	28
1500.00	2.00	4	3	1500.00	1232.98	277.68	3662.07	0.71	0.26	1.39	22	20	25
1500.00	2.00	4	3	5000.00	1358.80	281.99	3807.41	0.71	0.25	1.39	22	20	25
1500.00	2.00	4	4	4.10	585.27	109.68	2459.41	1.02	0.36	1.95	28	25	32
1500.00	2.00	4	4	1500.00	1260.85	289.68	3429.77	0.75	0.28	1.44	26	24	29
1500.00	2.00	4	4	5000.00	1317.22	322.96	3482.70	0.76	0.28	1.49	26	24	30
1500.00	2.00	4	5	4.10	658.33	116.92	2357.14	1.03	0.37	1.96	32	29	36
1500.00	2.00	4	5	1500.00	1231.84	302.77	3283.36	0.80	0.29	1.54	30	27	33
1500.00	2.00	4	5	5000.00	1276.26	331.38	3469.37	0.82	0.30	1.53	30	27	33
1500.00	2.00	5	3	4.10	622.33	109.43	2437.08	0.99	0.42	1.80	30	27	34
1500.00	2.00	5	3	1500.00	1255.97	299.75	3426.87	0.76	0.33	1.38	28	25	31
1500.00	2.00	5	3	5000.00	1234.88	289.60	3476.52	0.77	0.32	1.36	28	25	31
1500.00	2.00	5	4	4.10	659.52	145.87	2377.65	1.03	0.42	1.83	35	31	39
1500.00	2.00	5	4	1500.00	1270.11	329.15	3203.55	0.80	0.34	1.48	32	30	36
1500.00	2.00	5	4	5000.00	1268.22	330.44	3250.65	0.80	0.36	1.44	32	30	37
1500.00	2.00	5	5	4.10	732.61	173.42	2280.89	1.07	0.47	1.91	39	36	44
1500.00	2.00	5	5	1500.00	1287.43	366.85	3129.29	0.83	0.36	1.48	37	34	41
1500.00	2.00	5	5	5000.00	1244.09	347.73	3107.98	0.83	0.38	1.49	37	34	41

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
3000.00	0.12	3	3	2105.40	3093.15	2211.29	4356.43	0.27	0.11	0.47	15	15	16
3000.00	0.12	3	3	3000.00	3084.16	2152.68	4356.43	0.27	0.11	0.50	15	15	16
3000.00	0.12	3	3	3785.44	3102.79	2191.61	4356.43	0.27	0.10	0.50	15	15	16
3000.00	0.12	3	4	2105.40	2832.43	2217.24	3574.53	0.17	0.00	0.37	18	18	19
3000.00	0.12	3	4	3000.00	2832.43	2217.24	3702.69	0.17	0.00	0.39	18	18	19
3000.00	0.12	3	4	3785.44	2832.43	2319.40	3543.31	0.17	0.00	0.39	18	18	19
3000.00	0.12	3	5	2105.40	2954.73	2296.92	3869.95	0.24	0.09	0.44	21	21	22
3000.00	0.12	3	5	3000.00	2954.73	2296.92	3869.95	0.24	0.08	0.42	21	21	22
3000.00	0.12	3	5	3785.44	2947.01	2298.23	3869.95	0.24	0.08	0.44	21	21	22
3000.00	0.12	4	3	2105.40	3094.26	2301.24	4136.65	0.26	0.11	0.42	20	20	21
3000.00	0.12	4	3	3000.00	3056.38	2314.06	4136.65	0.27	0.11	0.43	20	20	21
3000.00	0.12	4	3	3785.44	3054.85	2319.10	4121.60	0.27	0.11	0.43	20	20	21
3000.00	0.12	4	4	2105.40	2838.20	2318.69	3490.55	0.19	0.10	0.36	24	24	25
3000.00	0.12	4	4	3000.00	2795.45	2343.40	3487.59	0.19	0.09	0.36	24	24	25
3000.00	0.12	4	4	3785.44	2838.20	2349.50	3490.55	0.19	0.10	0.37	24	24	25
3000.00	0.12	4	5	2105.40	3004.75	2431.54	3751.28	0.25	0.10	0.39	28	28	29
3000.00	0.12	4	5	3000.00	2990.63	2430.68	3786.55	0.25	0.10	0.39	28	28	29
3000.00	0.12	4	5	3785.44	2998.93	2415.91	3784.66	0.25	0.10	0.40	28	28	29
3000.00	0.12	5	3	2105.40	3140.37	2476.23	4012.78	0.27	0.12	0.40	25	25	26
3000.00	0.12	5	3	3000.00	3144.89	2443.84	3964.53	0.27	0.12	0.40	25	25	26
3000.00	0.12	5	3	3785.44	3156.35	2480.42	3964.53	0.27	0.12	0.40	25	25	26
3000.00	0.12	5	4	2105.40	2845.00	2398.32	3416.76	0.18	0.10	0.33	30	30	31
3000.00	0.12	5	4	3000.00	2859.52	2414.19	3471.60	0.18	0.09	0.33	30	30	31
3000.00	0.12	5	4	3785.44	2845.00	2397.19	3442.59	0.18	0.09	0.33	30	30	31
3000.00	0.12	5	5	2105.40	3065.15	2522.57	3710.56	0.24	0.10	0.38	35	35	36
3000.00	0.12	5	5	3000.00	3048.34	2491.17	3716.38	0.24	0.12	0.38	35	35	36
3000.00	0.12	5	5	3785.44	3047.20	2531.39	3679.47	0.25	0.12	0.38	35	35	36

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
3000.00	0.25	3	3	1434.61	3088.93	2020.51	4637.64	0.29	0.09	0.60	15	15	17
3000.00	0.25	3	3	3000.00	2968.59	1935.07	4715.63	0.31	0.10	0.59	15	15	17
3000.00	0.25	3	3	4869.97	3037.56	1960.00	4758.41	0.30	0.10	0.62	15	15	17
3000.00	0.25	3	4	1434.61	2995.27	2065.73	4514.02	0.26	0.07	0.55	18	18	20
3000.00	0.25	3	4	3000.00	2960.28	2067.03	4470.20	0.27	0.07	0.55	18	18	20
3000.00	0.25	3	4	4869.97	2926.64	2049.42	4465.59	0.27	0.07	0.55	18	18	20
3000.00	0.25	3	5	1434.61	3086.51	2261.28	4403.56	0.27	0.06	0.57	21	21	23
3000.00	0.25	3	5	3000.00	2973.09	2097.38	4303.43	0.29	0.08	0.57	21	21	23
3000.00	0.25	3	5	4869.97	2954.73	2107.43	4340.47	0.30	0.08	0.57	21	21	23
3000.00	0.25	4	3	1434.61	3107.23	2192.98	4440.87	0.30	0.11	0.53	20	20	22
3000.00	0.25	4	3	3000.00	2997.99	2054.16	4332.92	0.31	0.12	0.55	20	20	22
3000.00	0.25	4	3	4869.97	3014.97	2092.07	4328.29	0.33	0.12	0.57	20	20	22
3000.00	0.25	4	4	1434.61	2974.23	2198.89	4211.65	0.29	0.11	0.51	24	24	26
3000.00	0.25	4	4	3000.00	2939.67	2161.82	4210.10	0.29	0.10	0.50	24	24	26
3000.00	0.25	4	4	4869.97	2933.74	2126.72	4070.74	0.29	0.11	0.52	24	24	26
3000.00	0.25	4	5	1434.61	3052.76	2255.52	4209.34	0.29	0.11	0.54	28	28	30
3000.00	0.25	4	5	3000.00	2995.41	2235.50	4116.39	0.30	0.12	0.55	28	28	30
3000.00	0.25	4	5	4869.97	2997.34	2230.05	4100.37	0.30	0.12	0.55	28	28	30
3000.00	0.25	5	3	1434.61	3021.72	2155.32	4282.47	0.33	0.16	0.53	25	25	27
3000.00	0.25	5	3	3000.00	2993.59	2195.22	4222.35	0.33	0.14	0.52	25	25	27
3000.00	0.25	5	3	4869.97	3027.80	2227.17	4265.87	0.32	0.16	0.54	25	25	28
3000.00	0.25	5	4	1434.61	2949.70	2219.28	4025.10	0.31	0.13	0.50	30	30	32
3000.00	0.25	5	4	3000.00	2949.89	2206.76	4067.76	0.30	0.14	0.50	30	30	32
3000.00	0.25	5	4	4869.97	2931.96	2209.29	3981.40	0.30	0.13	0.50	30	30	32
3000.00	0.25	5	5	1434.61	3019.03	2292.06	4017.35	0.31	0.14	0.52	35	35	37
3000.00	0.25	5	5	3000.00	3016.21	2317.20	4026.13	0.31	0.15	0.52	35	35	37
3000.00	0.25	5	5	4869.97	3029.45	2287.24	3962.82	0.31	0.14	0.50	35	35	37

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
3000.00	0.50	3	3	686.03	2855.28	1528.95	5140.53	0.39	0.10	0.80	16	15	18
3000.00	0.50	3	3	3000.00	2864.03	1519.98	5146.75	0.39	0.12	0.81	16	15	17
3000.00	0.50	3	3	5000.00	2816.38	1500.19	5224.04	0.40	0.12	0.80	16	15	18
3000.00	0.50	3	4	686.03	2844.94	1575.26	5033.88	0.39	0.10	0.81	19	18	21
3000.00	0.50	3	4	3000.00	2855.55	1596.82	4915.18	0.37	0.11	0.78	19	17	21
3000.00	0.50	3	4	5000.00	2915.62	1659.55	5005.71	0.39	0.11	0.80	19	17	21
3000.00	0.50	3	5	686.03	2896.60	1660.84	4921.20	0.39	0.11	0.80	22	20	24
3000.00	0.50	3	5	3000.00	2917.64	1693.82	4789.25	0.38	0.10	0.80	22	19	24
3000.00	0.50	3	5	5000.00	2872.39	1671.93	4788.47	0.40	0.10	0.82	21	19	24
3000.00	0.50	4	3	686.03	2852.91	1620.80	4761.14	0.41	0.16	0.75	21	20	24
3000.00	0.50	4	3	3000.00	2824.10	1653.57	4789.67	0.42	0.16	0.74	21	20	23
3000.00	0.50	4	3	5000.00	2858.51	1689.97	4635.54	0.42	0.15	0.74	21	20	23
3000.00	0.50	4	4	686.03	2817.16	1694.00	4544.43	0.41	0.16	0.74	25	24	28
3000.00	0.50	4	4	3000.00	2881.49	1779.95	4734.41	0.41	0.16	0.75	25	23	27
3000.00	0.50	4	4	5000.00	2891.31	1712.21	4649.12	0.42	0.15	0.75	25	23	27
3000.00	0.50	4	5	686.03	2863.12	1814.81	4524.35	0.42	0.16	0.75	29	26	32
3000.00	0.50	4	5	3000.00	2913.67	1817.42	4642.79	0.41	0.16	0.76	29	26	31
3000.00	0.50	4	5	5000.00	2899.05	1801.95	4534.83	0.41	0.16	0.75	29	26	31
3000.00	0.50	5	3	686.03	2830.68	1733.61	4639.91	0.43	0.21	0.71	27	25	29
3000.00	0.50	5	3	3000.00	2869.08	1739.09	4556.62	0.43	0.19	0.71	26	25	29
3000.00	0.50	5	3	5000.00	2871.00	1713.64	4573.68	0.43	0.19	0.71	26	25	29
3000.00	0.50	5	4	686.03	2847.88	1824.72	4467.48	0.43	0.20	0.70	32	29	34
3000.00	0.50	5	4	3000.00	2860.28	1811.37	4401.75	0.42	0.19	0.71	31	29	34
3000.00	0.50	5	4	5000.00	2851.22	1834.93	4352.84	0.42	0.20	0.71	31	29	33
3000.00	0.50	5	5	686.03	2899.04	1940.28	4294.07	0.42	0.19	0.71	37	34	39
3000.00	0.50	5	5	3000.00	2867.18	1855.70	4338.73	0.43	0.20	0.72	36	33	39
3000.00	0.50	5	5	5000.00	2905.78	1946.13	4321.85	0.42	0.19	0.72	36	33	39

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
3000.00	1.25	3	3	75.02	1708.65	479.62	4539.75	0.63	0.16	1.33	17	15	21
3000.00	1.25	3	3	3000.00	2358.82	763.33	5236.49	0.51	0.13	1.13	16	15	19
3000.00	1.25	3	3	5000.00	2424.62	768.98	5361.37	0.53	0.14	1.12	16	14	19
3000.00	1.25	3	4	75.02	1834.10	546.44	4696.03	0.65	0.17	1.38	20	18	23
3000.00	1.25	3	4	3000.00	2395.79	843.85	5266.16	0.55	0.13	1.18	19	17	21
3000.00	1.25	3	4	5000.00	2351.85	786.34	5350.18	0.56	0.13	1.17	19	17	22
3000.00	1.25	3	5	75.02	1962.74	620.54	4572.50	0.63	0.17	1.41	23	21	26
3000.00	1.25	3	5	3000.00	2367.57	851.09	5054.34	0.57	0.14	1.22	22	19	25
3000.00	1.25	3	5	5000.00	2396.29	859.55	5171.18	0.55	0.14	1.21	22	18	24
3000.00	1.25	4	3	75.02	1793.16	617.05	4122.13	0.67	0.23	1.25	23	20	26
3000.00	1.25	4	3	3000.00	2292.78	866.06	4977.94	0.57	0.21	1.08	22	20	24
3000.00	1.25	4	3	5000.00	2280.60	861.07	4817.12	0.57	0.22	1.10	21	20	24
3000.00	1.25	4	4	75.02	1902.45	682.60	4289.21	0.68	0.26	1.26	27	24	30
3000.00	1.25	4	4	3000.00	2392.30	958.28	4618.20	0.58	0.23	1.10	25	23	28
3000.00	1.25	4	4	5000.00	2320.41	928.14	4642.03	0.60	0.23	1.13	25	23	28
3000.00	1.25	4	5	75.02	1924.45	752.14	3984.88	0.69	0.26	1.27	31	27	34
3000.00	1.25	4	5	3000.00	2367.83	976.48	4579.70	0.61	0.21	1.17	29	25	32
3000.00	1.25	4	5	5000.00	2376.15	982.37	4579.09	0.61	0.23	1.17	29	26	32
3000.00	1.25	5	3	75.02	1858.05	680.13	3972.64	0.68	0.30	1.18	28	25	32
3000.00	1.25	5	3	3000.00	2264.25	953.58	4623.90	0.60	0.27	1.04	27	25	30
3000.00	1.25	5	3	5000.00	2228.53	907.99	4539.60	0.60	0.27	1.03	27	25	30
3000.00	1.25	5	4	75.02	1963.42	797.73	4072.53	0.68	0.31	1.20	33	30	37
3000.00	1.25	5	4	3000.00	2278.14	988.96	4375.02	0.62	0.29	1.10	32	29	35
3000.00	1.25	5	4	5000.00	2316.42	1022.00	4389.73	0.63	0.27	1.08	32	29	35
3000.00	1.25	5	5	75.02	2031.99	872.56	4005.28	0.70	0.32	1.23	38	34	42
3000.00	1.25	5	5	3000.00	2319.96	1081.17	4305.00	0.64	0.29	1.11	37	33	40
3000.00	1.25	5	5	5000.00	2341.15	1041.87	4246.77	0.63	0.28	1.10	37	33	40

True LD50	True Sigma	# of Runs	# of Animals After Reversal	Prelim. Starting Dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of Animals	# of Animals 5%	# of Animals 95%
3000.00	2.00	3	3	8.20	759.86	96.96	3728.50	0.87	0.21	1.96	19	16	22
3000.00	2.00	3	3	3000.00	2091.98	443.93	5407.60	0.58	0.16	1.34	16	14	19
3000.00	2.00	3	3	5000.00	2034.75	464.47	5398.54	0.59	0.14	1.32	16	14	19
3000.00	2.00	3	4	8.20	870.95	148.31	3828.73	0.92	0.23	2.01	21	18	25
3000.00	2.00	3	4	3000.00	2048.31	464.47	5160.04	0.63	0.15	1.42	19	16	22
3000.00	2.00	3	4	5000.00	2062.40	503.67	5347.79	0.63	0.14	1.43	19	17	22
3000.00	2.00	3	5	8.20	979.18	167.89	3876.05	0.94	0.22	2.06	24	21	28
3000.00	2.00	3	5	3000.00	2059.22	489.01	5029.26	0.65	0.17	1.49	22	18	25
3000.00	2.00	3	5	5000.00	2103.50	518.06	5001.64	0.65	0.17	1.53	22	18	25
3000.00	2.00	4	3	8.20	961.80	153.36	3723.79	0.92	0.31	1.82	24	21	28
3000.00	2.00	4	3	3000.00	1916.66	489.86	4614.15	0.65	0.23	1.29	22	20	25
3000.00	2.00	4	3	5000.00	1987.52	478.31	4689.37	0.65	0.23	1.29	22	20	25
3000.00	2.00	4	4	8.20	1067.23	189.84	3609.56	0.92	0.34	1.84	28	25	32
3000.00	2.00	4	4	3000.00	2007.55	565.57	4634.82	0.70	0.24	1.39	26	23	29
3000.00	2.00	4	4	5000.00	2017.51	560.07	4763.65	0.68	0.25	1.35	26	23	29
3000.00	2.00	4	5	8.20	1149.78	263.90	3445.14	1.00	0.36	1.90	32	28	36
3000.00	2.00	4	5	3000.00	2003.77	558.29	4531.29	0.73	0.28	1.44	30	25	33
3000.00	2.00	4	5	5000.00	1928.43	571.71	4336.82	0.72	0.25	1.45	30	26	33
3000.00	2.00	5	3	8.20	1045.97	217.44	3465.11	0.95	0.38	1.68	30	26	34
3000.00	2.00	5	3	3000.00	1901.90	535.32	4352.07	0.68	0.28	1.29	27	25	31
3000.00	2.00	5	3	5000.00	1884.44	551.20	4403.93	0.69	0.29	1.27	27	25	31
3000.00	2.00	5	4	8.20	1124.68	285.70	3282.97	0.98	0.42	1.75	34	31	39
3000.00	2.00	5	4	3000.00	1895.01	577.36	4214.21	0.72	0.30	1.34	32	29	36
3000.00	2.00	5	4	5000.00	1881.89	568.70	4208.01	0.73	0.32	1.33	32	29	36
3000.00	2.00	5	5	8.20	1228.00	342.21	3333.77	1.00	0.42	1.79	39	35	44
3000.00	2.00	5	5	3000.00	1902.55	640.38	4059.19	0.77	0.33	1.38	37	33	41
3000.00	2.00	5	5	5000.00	1914.85	612.05	4047.19	0.76	0.33	1.38	37	33	41

Simulation Table IX. Multiple Up-and-Down Sequences with Varying Nominals and Averaging Slopes – Dose and Progression Set Independently. The simulations in this table explore a test design to estimate slope based on using three, four or five full UDP runs and also varying the number of animals tested after the first reversal. The slopes and LD50's from the individual runs were averaged to obtain the final estimate of the LD50 and slope. All the UDP runs were run in parallel with the results of each independent of the others.

The actual LD50 and sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, and began the initial LD50 run at a series of different starting doses as indicated in the table. The starting doses the hypothetical investigator chose were (unknown to him or her) the actual LD10, LD50 and LD80. In addition, the length of the UDP runs was varied by changing the number of animals tested after the first reversal.

Each line of the table represents one study design tested:

> Each line summarizes the results of 2500 simulated tests from a population with a true LD50 and sigma (reciprocal of slope) as detailed in the table.
>
> For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.
>
> The number of animals tested after the first reversal is as detailed in the table.
>
> All runs were standard up-and-down runs performed to estimate the LD50. Each run ended when six animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for all runs was 0.5.
>
> Final estimates of LD50 and slope were made by averaging the LD50's and slopes obtained from all the runs.
>
> For each line the median, 5% and 95% confidence limits of the results of 2500 separate simulation runs are presented. In this table the number of animals used in the study were tracked and are presented for each study design.

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1.50	0.12	3	3	1.05	1.32	1.03	1.87	0.20	0.04	0.44	15	15	16
1.50	0.12	3	3	1.50	1.32	1.02	1.85	0.20	0.04	0.44	15	15	16
1.50	0.12	3	3	1.89	1.32	1.03	1.85	0.20	0.04	0.46	15	15	16
1.50	0.12	3	4	1.05	1.51	1.15	2.00	0.18	0.04	0.40	18	18	19
1.50	0.12	3	4	1.50	1.51	1.15	2.01	0.18	0.04	0.40	18	18	19
1.50	0.12	3	4	1.89	1.51	1.15	2.01	0.18	0.04	0.41	18	18	19
1.50	0.12	3	5	1.05	1.39	1.12	1.84	0.19	0.05	0.40	21	21	22
1.50	0.12	3	5	1.50	1.35	1.11	1.84	0.19	0.05	0.41	21	21	22
1.50	0.12	3	5	1.89	1.35	1.11	1.84	0.17	0.05	0.41	21	21	22
1.50	0.12	4	3	1.05	1.31	1.06	1.73	0.20	0.08	0.41	20	20	21
1.50	0.12	4	3	1.50	1.31	1.06	1.81	0.19	0.08	0.38	20	20	21
1.50	0.12	4	3	1.89	1.31	1.06	1.74	0.19	0.08	0.40	20	20	21
1.50	0.12	4	4	1.05	1.54	1.18	1.90	0.18	0.07	0.36	24	24	25
1.50	0.12	4	4	1.50	1.54	1.17	1.90	0.18	0.07	0.37	24	24	25
1.50	0.12	4	4	1.89	1.54	1.21	1.90	0.18	0.07	0.36	24	24	25
1.50	0.12	4	5	1.05	1.37	1.15	1.70	0.17	0.06	0.35	28	28	29
1.50	0.12	4	5	1.50	1.39	1.15	1.71	0.17	0.06	0.36	28	28	29
1.50	0.12	4	5	1.89	1.38	1.16	1.71	0.17	0.06	0.36	28	28	29
1.50	0.12	5	3	1.05	1.32	1.09	1.71	0.18	0.08	0.37	25	25	26
1.50	0.12	5	3	1.50	1.32	1.09	1.70	0.18	0.08	0.36	25	25	27
1.50	0.12	5	3	1.89	1.32	1.09	1.70	0.18	0.08	0.36	25	25	26
1.50	0.12	5	4	1.05	1.56	1.25	1.85	0.18	0.08	0.33	30	30	31
1.50	0.12	5	4	1.50	1.56	1.24	1.85	0.18	0.08	0.33	30	30	31
1.50	0.12	5	4	1.89	1.56	1.25	1.85	0.19	0.08	0.33	30	30	31
1.50	0.12	5	5	1.05	1.38	1.19	1.65	0.17	0.08	0.33	35	35	37
1.50	0.12	5	5	1.50	1.39	1.19	1.66	0.17	0.08	0.33	35	35	37
1.50	0.12	5	5	1.89	1.39	1.19	1.66	0.17	0.08	0.33	35	35	37

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1.50	0.25	3	3	1.00	1.47	0.92	2.32	0.28	0.07	0.62	15	15	17
1.50	0.25	3	3	1.50	1.46	0.93	2.33	0.29	0.08	0.61	15	15	17
1.50	0.25	3	3	2.43	1.47	0.92	2.33	0.29	0.08	0.61	15	15	17
1.50	0.25	3	4	1.00	1.51	0.98	2.23	0.29	0.07	0.57	18	18	20
1.50	0.25	3	4	1.50	1.51	0.96	2.24	0.29	0.08	0.56	18	18	20
1.50	0.25	3	4	2.43	1.51	0.96	2.23	0.28	0.08	0.57	18	18	20
1.50	0.25	3	5	1.00	1.46	1.01	2.15	0.27	0.07	0.59	21	21	23
1.50	0.25	3	5	1.50	1.46	0.99	2.17	0.28	0.06	0.59	21	21	23
1.50	0.25	3	5	2.43	1.47	1.00	2.17	0.27	0.08	0.60	21	21	23
1.50	0.25	4	3	1.00	1.42	0.97	2.13	0.30	0.12	0.56	20	20	22
1.50	0.25	4	3	1.50	1.43	0.98	2.11	0.30	0.11	0.56	20	20	23
1.50	0.25	4	3	2.43	1.44	0.99	2.17	0.30	0.11	0.55	20	20	22
1.50	0.25	4	4	1.00	1.50	1.02	2.08	0.30	0.12	0.53	24	24	26
1.50	0.25	4	4	1.50	1.46	1.02	2.07	0.31	0.12	0.54	24	24	26
1.50	0.25	4	4	2.43	1.49	1.03	2.08	0.31	0.12	0.54	24	24	27
1.50	0.25	4	5	1.00	1.44	1.03	2.01	0.30	0.11	0.54	28	28	31
1.50	0.25	4	5	1.50	1.45	1.04	2.01	0.29	0.10	0.55	29	28	31
1.50	0.25	4	5	2.43	1.44	1.05	1.99	0.30	0.11	0.54	28	28	30
1.50	0.25	5	3	1.00	1.42	1.03	1.97	0.31	0.12	0.54	26	25	28
1.50	0.25	5	3	1.50	1.42	1.02	2.02	0.31	0.13	0.53	26	25	28
1.50	0.25	5	3	2.43	1.41	1.00	1.99	0.31	0.13	0.54	26	25	28
1.50	0.25	5	4	1.00	1.47	1.05	1.99	0.32	0.15	0.51	31	30	33
1.50	0.25	5	4	1.50	1.48	1.05	2.01	0.31	0.15	0.51	31	30	33
1.50	0.25	5	4	2.43	1.47	1.07	1.99	0.32	0.15	0.52	31	30	33
1.50	0.25	5	5	1.00	1.43	1.08	1.92	0.30	0.13	0.52	36	35	38
1.50	0.25	5	5	1.50	1.43	1.09	1.93	0.30	0.13	0.52	36	35	38
1.50	0.25	5	5	2.43	1.44	1.07	1.92	0.30	0.13	0.51	36	35	38

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1.50	0.50	3	3	1.00	1.58	0.89	2.90	0.38	0.09	0.80	16	15	18
1.50	0.50	3	3	1.50	1.59	0.88	2.96	0.38	0.10	0.79	16	14	18
1.50	0.50	3	3	3.95	1.60	0.90	3.02	0.39	0.10	0.81	16	15	19
1.50	0.50	3	4	1.00	1.54	0.90	2.76	0.39	0.10	0.80	19	16	21
1.50	0.50	3	4	1.50	1.60	0.92	2.73	0.38	0.10	0.80	19	17	21
1.50	0.50	3	4	3.95	1.60	0.93	2.86	0.39	0.10	0.82	19	17	21
1.50	0.50	3	5	1.00	1.57	0.93	2.68	0.39	0.10	0.80	22	19	24
1.50	0.50	3	5	1.50	1.55	0.92	2.69	0.38	0.10	0.80	22	19	24
1.50	0.50	3	5	3.95	1.55	0.92	2.66	0.38	0.10	0.82	22	19	24
1.50	0.50	4	3	1.00	1.59	0.96	2.73	0.41	0.15	0.73	21	20	23
1.50	0.50	4	3	1.50	1.58	0.97	2.73	0.41	0.15	0.73	21	20	23
1.50	0.50	4	3	3.95	1.62	0.97	2.74	0.41	0.16	0.76	21	20	24
1.50	0.50	4	4	1.00	1.58	0.99	2.50	0.41	0.16	0.74	25	23	27
1.50	0.50	4	4	1.50	1.57	0.98	2.61	0.40	0.15	0.74	25	22	27
1.50	0.50	4	4	3.95	1.59	0.98	2.65	0.41	0.16	0.76	25	23	28
1.50	0.50	4	5	1.00	1.57	0.99	2.47	0.41	0.15	0.75	29	26	31
1.50	0.50	4	5	1.50	1.57	0.99	2.48	0.41	0.15	0.74	29	25	31
1.50	0.50	4	5	3.95	1.57	1.00	2.50	0.41	0.16	0.77	29	26	32
1.50	0.50	5	3	1.00	1.59	1.02	2.56	0.43	0.19	0.70	26	25	29
1.50	0.50	5	3	1.50	1.59	1.03	2.59	0.42	0.19	0.70	26	25	29
1.50	0.50	5	3	3.95	1.60	1.01	2.56	0.43	0.19	0.71	27	25	29
1.50	0.50	5	4	1.00	1.58	1.02	2.47	0.42	0.20	0.70	31	28	34
1.50	0.50	5	4	1.50	1.58	1.03	2.44	0.42	0.20	0.72	31	28	34
1.50	0.50	5	4	3.95	1.59	1.03	2.47	0.43	0.21	0.73	32	29	34
1.50	0.50	5	5	1.00	1.57	1.05	2.36	0.42	0.20	0.71	36	33	39
1.50	0.50	5	5	1.50	1.55	1.05	2.37	0.42	0.19	0.71	36	32	39
1.50	0.50	5	5	3.95	1.57	1.04	2.37	0.42	0.19	0.74	37	33	40

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1.50	1.25	3	3	1.00	1.93	0.89	5.06	0.53	0.13	1.13	16	14	18
1.50	1.25	3	3	1.50	1.99	0.92	4.98	0.53	0.14	1.14	16	14	18
1.50	1.25	3	3	16.91	3.13	1.16	9.19	0.66	0.18	1.31	17	15	21
1.50	1.25	3	4	1.00	1.94	0.94	4.89	0.56	0.14	1.18	19	16	21
1.50	1.25	3	4	1.50	1.91	0.91	4.75	0.54	0.14	1.18	19	16	21
1.50	1.25	3	4	16.91	2.96	1.16	8.11	0.67	0.18	1.36	20	18	24
1.50	1.25	3	5	1.00	1.94	0.95	4.59	0.56	0.14	1.21	22	18	24
1.50	1.25	3	5	1.50	1.93	0.94	4.39	0.58	0.15	1.24	22	18	24
1.50	1.25	3	5	16.91	2.88	1.20	7.71	0.66	0.17	1.39	23	21	26
1.50	1.25	4	3	1.00	2.01	1.00	4.47	0.59	0.21	1.09	21	19	24
1.50	1.25	4	3	1.50	2.02	1.01	4.49	0.58	0.22	1.08	21	19	24
1.50	1.25	4	3	16.91	3.22	1.37	8.45	0.70	0.27	1.20	23	21	27
1.50	1.25	4	4	1.00	2.01	1.02	4.19	0.60	0.23	1.11	25	22	28
1.50	1.25	4	4	1.50	2.01	1.01	4.35	0.59	0.22	1.10	25	22	28
1.50	1.25	4	4	16.91	3.01	1.34	7.18	0.71	0.28	1.24	27	24	31
1.50	1.25	4	5	1.00	1.95	1.05	4.19	0.61	0.22	1.17	29	25	32
1.50	1.25	4	5	1.50	1.94	1.03	4.14	0.61	0.23	1.13	29	25	32
1.50	1.25	4	5	16.91	2.77	1.29	6.44	0.72	0.29	1.26	31	28	35
1.50	1.25	5	3	1.00	2.03	1.09	4.12	0.61	0.27	1.01	27	24	30
1.50	1.25	5	3	1.50	2.03	1.07	4.27	0.60	0.27	1.02	27	25	30
1.50	1.25	5	3	16.91	3.24	1.52	7.35	0.73	0.34	1.19	29	26	33
1.50	1.25	5	4	1.00	2.02	1.14	4.06	0.62	0.26	1.06	32	28	35
1.50	1.25	5	4	1.50	2.00	1.13	3.80	0.62	0.29	1.05	32	28	35
1.50	1.25	5	4	16.91	3.02	1.50	6.70	0.74	0.34	1.20	34	31	38
1.50	1.25	5	5	1.00	2.00	1.14	3.86	0.64	0.29	1.11	37	32	40
1.50	1.25	5	5	1.50	2.00	1.12	3.83	0.64	0.29	1.10	37	32	40
1.50	1.25	5	5	16.91	2.85	1.44	6.09	0.75	0.35	1.23	39	35	43

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1.50	2.00	3	3	1.00	2.20	0.89	7.11	0.60	0.14	1.40	16	14	19
1.50	2.00	3	3	1.50	2.22	0.93	7.35	0.62	0.16	1.34	16	14	19
1.50	2.00	3	3	72.33	8.43	2.15	35.32	0.94	0.28	1.78	18	15	23
1.50	2.00	3	4	1.00	2.24	0.92	6.61	0.64	0.17	1.46	19	16	22
1.50	2.00	3	4	1.50	2.15	0.94	6.87	0.66	0.17	1.44	19	16	22
1.50	2.00	3	4	72.33	7.41	2.03	30.91	0.97	0.26	1.82	21	18	25
1.50	2.00	3	5	1.00	2.18	0.96	6.35	0.68	0.16	1.50	22	18	25
1.50	2.00	3	5	1.50	2.22	0.99	6.34	0.69	0.18	1.51	22	18	25
1.50	2.00	3	5	72.33	6.47	1.92	25.88	0.98	0.27	1.91	24	21	28
1.50	2.00	4	3	1.00	2.25	1.05	5.72	0.67	0.25	1.26	22	19	24
1.50	2.00	4	3	1.50	2.27	1.05	5.84	0.66	0.26	1.27	22	19	25
1.50	2.00	4	3	72.33	8.29	2.47	27.42	0.98	0.42	1.64	25	21	29
1.50	2.00	4	4	1.00	2.29	1.08	5.68	0.71	0.27	1.36	26	22	29
1.50	2.00	4	4	1.50	2.28	1.07	5.77	0.70	0.26	1.34	26	22	29
1.50	2.00	4	4	72.33	7.29	2.38	24.32	1.01	0.42	1.71	29	25	33
1.50	2.00	4	5	1.00	2.32	1.06	5.98	0.73	0.27	1.41	29	25	33
1.50	2.00	4	5	1.50	2.26	1.08	5.56	0.74	0.27	1.39	30	25	33
1.50	2.00	4	5	72.33	6.45	2.12	20.10	1.02	0.41	1.77	33	29	38
1.50	2.00	5	3	1.00	2.32	1.15	5.45	0.70	0.30	1.24	27	24	30
1.50	2.00	5	3	1.50	2.34	1.13	5.47	0.70	0.30	1.24	27	25	30
1.50	2.00	5	3	72.33	8.51	3.03	25.62	1.01	0.49	1.59	31	27	36
1.50	2.00	5	4	1.00	2.34	1.17	5.51	0.74	0.33	1.32	32	28	35
1.50	2.00	5	4	1.50	2.34	1.13	5.37	0.73	0.33	1.29	32	29	35
1.50	2.00	5	4	72.33	7.44	2.59	20.63	1.05	0.50	1.64	36	32	41
1.50	2.00	5	5	1.00	2.31	1.20	5.22	0.75	0.35	1.35	37	32	40
1.50	2.00	5	5	1.50	2.35	1.17	5.36	0.76	0.34	1.34	37	32	40
1.50	2.00	5	5	72.33	6.69	2.51	18.96	1.06	0.52	1.70	41	36	46

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
50.00	0.12	3	3	35.09	58.05	41.87	78.61	0.23	0.09	0.46	15	15	16
50.00	0.12	3	3	50.00	48.42	38.21	65.42	0.34	0.12	0.46	15	15	15
50.00	0.12	3	3	63.09	48.22	32.77	65.15	0.28	0.05	0.46	15	15	15
50.00	0.12	3	4	35.09	48.39	39.52	64.92	0.17	0.00	0.35	18	18	19
50.00	0.12	3	4	50.00	53.22	41.27	60.58	0.17	0.00	0.35	18	18	18
50.00	0.12	3	4	63.09	52.08	40.29	59.27	0.17	0.00	0.35	18	18	18
50.00	0.12	3	5	35.09	55.74	42.18	73.52	0.20	0.05	0.46	21	21	22
50.00	0.12	3	5	50.00	48.69	39.07	63.98	0.30	0.11	0.46	21	21	21
50.00	0.12	3	5	63.09	47.36	37.37	61.21	0.23	0.05	0.46	21	21	21
50.00	0.12	4	3	35.09	55.99	43.98	71.39	0.26	0.11	0.41	20	20	21
50.00	0.12	4	3	50.00	50.00	37.43	66.80	0.32	0.18	0.45	20	20	20
50.00	0.12	4	3	63.09	47.15	35.30	63.10	0.28	0.11	0.42	20	20	20
50.00	0.12	4	4	35.09	51.48	42.47	62.40	0.20	0.10	0.31	24	24	25
50.00	0.12	4	4	50.00	50.00	41.25	60.62	0.20	0.10	0.31	24	24	24
50.00	0.12	4	4	63.09	52.05	40.72	63.10	0.20	0.10	0.32	24	24	24
50.00	0.12	4	5	35.09	55.07	43.20	67.80	0.22	0.11	0.43	28	28	29
50.00	0.12	4	5	50.00	50.00	40.62	61.68	0.28	0.14	0.43	28	28	28
50.00	0.12	4	5	63.09	47.27	37.06	58.19	0.24	0.11	0.43	28	28	28
50.00	0.12	5	3	35.09	56.93	45.10	71.77	0.25	0.12	0.39	25	25	26
50.00	0.12	5	3	50.00	50.90	38.85	64.35	0.30	0.19	0.43	25	25	25
50.00	0.12	5	3	63.09	46.59	35.56	61.81	0.28	0.14	0.42	25	25	25
50.00	0.12	5	4	35.09	49.57	42.49	62.36	0.21	0.09	0.31	30	30	31
50.00	0.12	5	4	50.00	48.16	41.29	60.55	0.21	0.09	0.31	30	30	30
50.00	0.12	5	4	63.09	48.28	41.33	60.69	0.21	0.09	0.31	30	30	31
50.00	0.12	5	5	35.09	54.69	44.69	66.16	0.23	0.12	0.38	35	35	36
50.00	0.12	5	5	50.00	50.92	40.42	61.85	0.28	0.17	0.40	35	35	35
50.00	0.12	5	5	63.09	46.56	38.99	58.06	0.26	0.12	0.39	35	35	36

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
50.00	0.25	3	3	23.91	54.66	36.41	81.46	0.28	0.08	0.56	16	15	17
50.00	0.25	3	3	50.00	51.63	32.51	82.71	0.31	0.12	0.59	15	15	16
50.00	0.25	3	3	81.17	45.91	30.83	72.19	0.28	0.07	0.58	15	15	16
50.00	0.25	3	4	23.91	51.94	35.39	75.35	0.27	0.05	0.54	19	18	20
50.00	0.25	3	4	50.00	50.68	34.93	74.00	0.24	0.00	0.53	18	18	19
50.00	0.25	3	4	81.17	48.97	33.06	69.65	0.27	0.05	0.54	18	18	19
50.00	0.25	3	5	23.91	54.12	38.06	76.01	0.25	0.05	0.53	22	21	23
50.00	0.25	3	5	50.00	51.15	34.93	73.39	0.30	0.08	0.56	21	21	22
50.00	0.25	3	5	81.17	47.89	33.54	67.83	0.26	0.05	0.55	21	21	22
50.00	0.25	4	3	23.91	54.46	37.55	77.05	0.28	0.11	0.51	21	20	22
50.00	0.25	4	3	50.00	50.00	33.41	74.71	0.32	0.13	0.54	20	20	21
50.00	0.25	4	3	81.17	46.62	31.93	68.08	0.29	0.11	0.52	20	20	22
50.00	0.25	4	4	23.91	51.20	37.57	71.96	0.28	0.11	0.52	25	24	26
50.00	0.25	4	4	50.00	50.00	36.46	68.63	0.27	0.10	0.50	24	24	25
50.00	0.25	4	4	81.17	49.23	34.95	67.08	0.29	0.10	0.51	24	24	26
50.00	0.25	4	5	23.91	53.55	39.53	71.39	0.27	0.11	0.49	29	28	30
50.00	0.25	4	5	50.00	50.00	36.19	69.22	0.31	0.12	0.52	28	28	29
50.00	0.25	4	5	81.17	47.55	35.29	65.93	0.28	0.11	0.52	28	28	30
50.00	0.25	5	3	23.91	54.56	39.47	75.38	0.28	0.13	0.49	26	25	28
50.00	0.25	5	3	50.00	50.52	35.08	71.79	0.32	0.15	0.52	25	25	26
50.00	0.25	5	3	81.17	46.13	33.26	64.60	0.30	0.14	0.52	26	25	27
50.00	0.25	5	4	23.91	52.57	38.31	69.91	0.29	0.13	0.48	31	30	33
50.00	0.25	5	4	50.00	50.25	37.68	65.95	0.28	0.13	0.48	30	30	31
50.00	0.25	5	4	81.17	48.79	36.14	66.94	0.29	0.13	0.49	31	30	32
50.00	0.25	5	5	23.91	53.76	40.76	69.58	0.28	0.13	0.47	36	35	38
50.00	0.25	5	5	50.00	50.64	37.85	68.06	0.31	0.14	0.50	35	35	36
50.00	0.25	5	5	81.17	47.00	36.13	62.55	0.29	0.13	0.48	36	35	37

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
50.00	0.50	3	3	11.43	47.73	24.58	90.18	0.42	0.13	0.86	17	15	19
50.00	0.50	3	3	50.00	50.61	25.44	97.39	0.41	0.14	0.88	15	15	17
50.00	0.50	3	3	131.76	50.15	26.73	99.70	0.41	0.13	0.86	16	15	18
50.00	0.50	3	4	11.43	49.17	27.06	87.82	0.41	0.10	0.88	20	18	22
50.00	0.50	3	4	50.00	50.68	27.32	91.29	0.41	0.11	0.84	18	18	20
50.00	0.50	3	4	131.76	51.06	28.43	95.55	0.42	0.11	0.89	19	18	21
50.00	0.50	3	5	11.43	49.38	27.42	85.45	0.42	0.11	0.85	23	21	25
50.00	0.50	3	5	50.00	50.91	28.18	89.38	0.42	0.12	0.89	21	21	23
50.00	0.50	3	5	131.76	50.01	28.38	86.78	0.41	0.12	0.84	22	21	24
50.00	0.50	4	3	11.43	47.92	27.69	86.33	0.45	0.17	0.81	23	21	25
50.00	0.50	4	3	50.00	50.00	27.93	90.02	0.46	0.18	0.81	21	20	22
50.00	0.50	4	3	131.76	51.23	28.23	91.89	0.44	0.17	0.80	22	20	24
50.00	0.50	4	4	11.43	48.83	29.30	81.53	0.44	0.18	0.80	27	25	29
50.00	0.50	4	4	50.00	50.05	30.85	82.71	0.43	0.16	0.79	25	24	26
50.00	0.50	4	4	131.76	51.01	30.38	85.99	0.45	0.18	0.80	26	24	28
50.00	0.50	4	5	11.43	49.69	29.30	81.34	0.44	0.16	0.79	31	29	33
50.00	0.50	4	5	50.00	49.99	30.24	81.29	0.44	0.17	0.80	29	28	30
50.00	0.50	4	5	131.76	50.31	30.57	82.84	0.44	0.17	0.81	30	28	32
50.00	0.50	5	3	11.43	48.57	29.08	81.95	0.46	0.22	0.77	28	26	31
50.00	0.50	5	3	50.00	49.77	29.27	81.70	0.46	0.21	0.77	26	25	28
50.00	0.50	5	3	131.76	51.43	31.25	83.76	0.45	0.20	0.76	27	25	29
50.00	0.50	5	4	11.43	49.06	30.61	77.44	0.46	0.21	0.78	33	31	36
50.00	0.50	5	4	50.00	50.46	31.27	79.94	0.45	0.21	0.78	31	30	33
50.00	0.50	5	4	131.76	51.52	31.89	82.82	0.47	0.21	0.77	32	30	34
50.00	0.50	5	5	11.43	49.00	31.18	76.15	0.46	0.21	0.75	39	36	41
50.00	0.50	5	5	50.00	50.30	32.21	77.18	0.46	0.20	0.77	36	35	38
50.00	0.50	5	5	131.76	50.35	32.34	77.37	0.45	0.21	0.76	37	35	39

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
50.00	1.25	3	3	1.25	21.61	6.52	71.72	0.81	0.21	1.60	19	16	23
50.00	1.25	3	3	50.00	49.39	17.39	150.52	0.69	0.19	1.37	16	15	18
50.00	1.25	3	3	563.63	100.40	29.33	305.73	0.75	0.20	1.56	18	15	21
50.00	1.25	3	4	1.25	23.29	7.71	79.04	0.82	0.23	1.63	22	19	26
50.00	1.25	3	4	50.00	49.75	16.65	141.76	0.71	0.18	1.52	19	18	21
50.00	1.25	3	4	563.63	90.56	29.43	276.52	0.79	0.21	1.61	21	18	24
50.00	1.25	3	5	1.25	25.61	8.29	82.20	0.84	0.25	1.64	25	22	29
50.00	1.25	3	5	50.00	49.05	18.02	136.89	0.74	0.20	1.55	22	21	24
50.00	1.25	3	5	563.63	85.23	28.68	249.49	0.80	0.22	1.67	24	21	27
50.00	1.25	4	3	1.25	21.68	7.56	67.38	0.84	0.33	1.48	25	21	30
50.00	1.25	4	3	50.00	50.00	19.08	129.38	0.75	0.28	1.34	22	20	24
50.00	1.25	4	3	563.63	99.00	32.98	269.28	0.81	0.33	1.46	24	21	28
50.00	1.25	4	4	1.25	24.08	9.41	65.32	0.87	0.34	1.55	29	26	34
50.00	1.25	4	4	50.00	50.46	20.85	122.38	0.78	0.29	1.40	26	24	28
50.00	1.25	4	4	563.63	89.85	31.56	235.71	0.83	0.33	1.45	28	25	32
50.00	1.25	4	5	1.25	26.01	10.25	66.52	0.89	0.34	1.55	33	30	38
50.00	1.25	4	5	50.00	50.98	20.75	115.50	0.79	0.30	1.45	30	28	32
50.00	1.25	4	5	563.63	84.08	34.07	215.97	0.85	0.34	1.55	32	29	36
50.00	1.25	5	3	1.25	22.08	8.49	57.79	0.87	0.41	1.40	31	27	36
50.00	1.25	5	3	50.00	50.66	21.97	117.14	0.76	0.35	1.27	27	25	30
50.00	1.25	5	3	563.63	98.07	38.67	240.22	0.82	0.36	1.38	30	26	34
50.00	1.25	5	4	1.25	23.73	10.36	60.93	0.88	0.40	1.46	36	32	41
50.00	1.25	5	4	50.00	50.23	22.71	112.93	0.79	0.36	1.32	32	30	35
50.00	1.25	5	4	563.63	90.26	37.15	211.91	0.85	0.39	1.41	35	31	39
50.00	1.25	5	5	1.25	27.21	11.49	62.92	0.91	0.43	1.51	42	37	46
50.00	1.25	5	5	50.00	49.90	22.38	109.69	0.82	0.37	1.39	37	35	40
50.00	1.25	5	5	563.63	83.96	36.66	186.20	0.88	0.41	1.45	40	36	44

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
50.00	2.00	3	3	1.00	11.69	3.33	54.68	0.90	0.23	1.91	18	15	22
50.00	2.00	3	3	50.00	51.54	13.16	186.86	0.85	0.22	1.76	16	15	19
50.00	2.00	3	3	2411.09	266.78	53.61	1055.78	0.99	0.25	2.07	19	15	23
50.00	2.00	3	4	1.00	13.49	3.71	58.34	0.95	0.25	2.02	21	18	25
50.00	2.00	3	4	50.00	49.84	13.47	184.48	0.86	0.21	1.88	19	18	22
50.00	2.00	3	4	2411.09	233.63	48.92	913.12	1.03	0.26	2.06	22	18	26
50.00	2.00	3	5	1.00	15.31	4.28	61.66	0.99	0.27	2.09	24	21	28
50.00	2.00	3	5	50.00	51.02	13.78	181.28	0.95	0.23	1.96	22	21	25
50.00	2.00	3	5	2411.09	206.82	43.63	791.70	1.05	0.30	2.19	25	21	30
50.00	2.00	4	3	1.00	12.39	4.02	47.31	0.95	0.38	1.73	24	21	29
50.00	2.00	4	3	50.00	49.89	16.33	159.26	0.90	0.33	1.64	22	20	25
50.00	2.00	4	3	2411.09	252.26	62.99	849.17	1.04	0.39	1.90	25	21	30
50.00	2.00	4	4	1.00	14.45	4.66	52.50	1.03	0.41	1.89	28	25	33
50.00	2.00	4	4	50.00	49.55	15.99	156.99	0.97	0.36	1.73	26	24	29
50.00	2.00	4	4	2411.09	224.70	59.29	759.83	1.08	0.42	1.94	29	25	34
50.00	2.00	4	5	1.00	15.89	5.21	52.45	1.06	0.40	1.92	32	28	37
50.00	2.00	4	5	50.00	50.13	16.42	155.54	1.00	0.37	1.84	30	28	33
50.00	2.00	4	5	2411.09	197.48	52.67	647.83	1.11	0.43	2.05	33	29	39
50.00	2.00	5	3	1.00	13.17	4.69	40.93	0.98	0.45	1.68	30	26	35
50.00	2.00	5	3	50.00	49.83	17.79	139.92	0.92	0.42	1.57	28	25	31
50.00	2.00	5	3	2411.09	258.52	69.59	761.75	1.06	0.49	1.81	31	27	37
50.00	2.00	5	4	1.00	14.20	5.20	43.66	1.05	0.48	1.78	35	31	40
50.00	2.00	5	4	50.00	51.88	17.74	137.80	0.97	0.45	1.65	33	30	36
50.00	2.00	5	4	2411.09	220.97	69.03	645.98	1.11	0.50	1.83	36	32	42
50.00	2.00	5	5	1.00	16.57	6.05	48.38	1.10	0.51	1.86	40	36	45
50.00	2.00	5	5	50.00	48.82	18.83	135.43	1.05	0.48	1.73	38	35	41
50.00	2.00	5	5	2411.09	197.35	63.15	570.35	1.16	0.54	1.96	41	37	47

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
250.00	0.12	3	3	175.45	280.91	197.28	393.04	0.23	0.09	0.46	15	15	16
250.00	0.12	3	3	250.00	242.11	177.53	327.11	0.34	0.12	0.46	15	15	15
250.00	0.12	3	3	315.45	241.09	163.87	325.73	0.28	0.12	0.46	15	15	15
250.00	0.12	3	4	175.45	241.95	212.57	312.01	0.17	0.00	0.35	18	18	19
250.00	0.12	3	4	250.00	266.10	206.35	302.88	0.17	0.00	0.35	18	18	18
250.00	0.12	3	4	315.45	260.38	201.45	296.36	0.17	0.00	0.33	18	18	18
250.00	0.12	3	5	175.45	278.71	210.89	345.82	0.20	0.05	0.46	21	21	22
250.00	0.12	3	5	250.00	252.96	195.37	319.89	0.30	0.11	0.46	21	21	21
250.00	0.12	3	5	315.45	236.78	186.84	306.04	0.20	0.05	0.46	21	21	21
250.00	0.12	4	3	175.45	279.95	219.89	354.07	0.25	0.11	0.41	20	20	21
250.00	0.12	4	3	250.00	249.98	187.13	333.93	0.32	0.18	0.45	20	20	20
250.00	0.12	4	3	315.45	235.72	176.46	315.43	0.28	0.11	0.42	20	20	20
250.00	0.12	4	4	175.45	257.41	212.34	312.03	0.20	0.10	0.32	24	24	25
250.00	0.12	4	4	250.00	249.98	206.21	303.03	0.20	0.10	0.30	24	24	24
250.00	0.12	4	4	315.45	260.21	203.57	315.43	0.20	0.10	0.31	24	24	24
250.00	0.12	4	5	175.45	275.39	216.21	339.04	0.22	0.11	0.42	28	28	29
250.00	0.12	4	5	250.00	249.98	202.87	318.40	0.28	0.13	0.43	28	28	28
250.00	0.12	4	5	315.45	236.29	191.61	290.90	0.24	0.11	0.43	28	28	28
250.00	0.12	5	3	175.45	284.68	225.50	358.89	0.25	0.13	0.39	25	25	26
250.00	0.12	5	3	250.00	254.83	194.24	321.71	0.30	0.19	0.43	25	25	25
250.00	0.12	5	3	315.45	232.89	177.52	294.00	0.28	0.14	0.42	25	25	25
250.00	0.12	5	4	175.45	247.86	212.49	303.00	0.21	0.09	0.31	30	30	31
250.00	0.12	5	4	250.00	259.52	206.43	302.72	0.21	0.09	0.31	30	30	30
250.00	0.12	5	4	315.45	249.31	206.62	303.41	0.21	0.09	0.31	30	30	31
250.00	0.12	5	5	175.45	273.48	224.34	325.04	0.23	0.12	0.38	35	35	36
250.00	0.12	5	5	250.00	245.48	202.09	309.00	0.28	0.16	0.41	35	35	35
250.00	0.12	5	5	315.45	238.95	194.93	290.26	0.26	0.12	0.39	35	35	36

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
250.00	0.25	3	3	119.55	271.68	181.62	407.30	0.28	0.08	0.56	16	15	17
250.00	0.25	3	3	250.00	258.14	162.56	384.47	0.31	0.11	0.59	15	15	16
250.00	0.25	3	3	405.83	228.56	153.46	360.93	0.28	0.08	0.57	15	15	16
250.00	0.25	3	4	119.55	259.71	184.15	387.40	0.28	0.06	0.55	19	18	20
250.00	0.25	3	4	250.00	246.62	176.58	357.84	0.24	0.00	0.53	18	18	19
250.00	0.25	3	4	405.83	249.09	170.09	349.01	0.27	0.05	0.54	18	18	19
250.00	0.25	3	5	119.55	266.94	189.61	375.66	0.25	0.05	0.53	22	21	23
250.00	0.25	3	5	250.00	251.15	174.65	357.84	0.30	0.05	0.56	21	21	22
250.00	0.25	3	5	405.83	236.56	168.15	337.63	0.25	0.05	0.54	21	21	22
250.00	0.25	4	3	119.55	272.34	185.82	390.86	0.28	0.11	0.52	21	20	22
250.00	0.25	4	3	250.00	249.98	167.02	374.14	0.32	0.13	0.55	20	20	21
250.00	0.25	4	3	405.83	229.21	160.47	332.42	0.28	0.11	0.53	20	20	22
250.00	0.25	4	4	119.55	260.87	185.26	366.03	0.29	0.11	0.50	25	24	26
250.00	0.25	4	4	250.00	249.98	187.14	343.40	0.26	0.10	0.49	24	24	25
250.00	0.25	4	4	405.83	244.10	177.54	334.75	0.29	0.10	0.51	24	24	26
250.00	0.25	4	5	119.55	269.65	196.46	359.82	0.27	0.11	0.51	29	28	30
250.00	0.25	4	5	250.00	249.98	181.21	338.10	0.31	0.11	0.52	28	28	29
250.00	0.25	4	5	405.83	237.61	175.65	328.73	0.27	0.11	0.50	28	28	30
250.00	0.25	5	3	119.55	273.93	199.91	378.75	0.29	0.13	0.50	26	25	28
250.00	0.25	5	3	250.00	250.24	176.54	353.56	0.32	0.15	0.52	25	25	26
250.00	0.25	5	3	405.83	230.06	168.96	325.40	0.30	0.14	0.50	26	25	27
250.00	0.25	5	4	119.55	262.68	195.99	353.99	0.29	0.14	0.49	31	30	33
250.00	0.25	5	4	250.00	248.80	186.77	328.90	0.28	0.13	0.48	30	30	31
250.00	0.25	5	4	405.83	242.42	184.13	327.22	0.29	0.13	0.48	31	30	32
250.00	0.25	5	5	119.55	268.60	204.66	347.90	0.28	0.13	0.47	36	35	38
250.00	0.25	5	5	250.00	252.60	188.94	333.23	0.31	0.15	0.49	35	35	36
250.00	0.25	5	5	405.83	237.60	180.63	310.60	0.29	0.14	0.49	36	35	37

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
250.00	0.50	3	3	57.17	239.91	120.61	460.42	0.41	0.14	0.84	17	15	19
250.00	0.50	3	3	250.00	252.95	128.58	486.06	0.41	0.15	0.84	15	15	17
250.00	0.50	3	3	658.80	250.22	135.23	494.92	0.41	0.12	0.85	16	15	18
250.00	0.50	3	4	57.17	244.50	133.59	451.91	0.41	0.11	0.88	20	18	22
250.00	0.50	3	4	250.00	252.07	139.60	454.39	0.42	0.14	0.86	18	18	20
250.00	0.50	3	4	658.80	256.69	139.19	466.82	0.41	0.11	0.86	19	18	21
250.00	0.50	3	5	57.17	247.24	141.91	425.21	0.41	0.11	0.87	23	21	25
250.00	0.50	3	5	250.00	245.97	140.25	439.44	0.41	0.11	0.85	21	21	23
250.00	0.50	3	5	658.80	251.39	144.14	453.46	0.42	0.12	0.86	22	21	24
250.00	0.50	4	3	57.17	242.03	136.92	425.88	0.44	0.17	0.79	23	21	25
250.00	0.50	4	3	250.00	249.98	139.66	453.91	0.45	0.18	0.80	21	20	22
250.00	0.50	4	3	658.80	256.98	146.08	443.71	0.45	0.17	0.81	22	20	24
250.00	0.50	4	4	57.17	242.80	145.50	413.31	0.44	0.17	0.82	27	25	29
250.00	0.50	4	4	250.00	249.98	146.40	428.54	0.44	0.16	0.81	25	24	26
250.00	0.50	4	4	658.80	256.69	152.61	428.88	0.44	0.18	0.81	26	24	28
250.00	0.50	4	5	57.17	249.96	152.00	402.53	0.44	0.17	0.82	31	29	33
250.00	0.50	4	5	250.00	249.54	154.46	418.67	0.44	0.18	0.81	29	28	30
250.00	0.50	4	5	658.80	250.53	153.30	418.25	0.44	0.17	0.81	30	28	32
250.00	0.50	5	3	57.17	242.32	142.84	397.95	0.46	0.22	0.78	28	26	31
250.00	0.50	5	3	250.00	253.19	148.12	417.96	0.46	0.22	0.77	26	25	28
250.00	0.50	5	3	658.80	256.29	155.84	432.70	0.46	0.20	0.76	27	25	29
250.00	0.50	5	4	57.17	245.23	149.72	395.12	0.46	0.21	0.78	33	31	36
250.00	0.50	5	4	250.00	248.33	156.15	402.73	0.45	0.21	0.76	31	30	33
250.00	0.50	5	4	658.80	256.09	159.18	407.94	0.46	0.21	0.77	32	30	34
250.00	0.50	5	5	57.17	247.90	158.89	381.96	0.46	0.21	0.77	38	36	41
250.00	0.50	5	5	250.00	250.66	160.50	384.95	0.46	0.21	0.77	36	35	38
250.00	0.50	5	5	658.80	248.45	160.41	395.51	0.46	0.22	0.77	37	35	39

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
250.00	1.25	3	3	6.25	95.81	27.49	350.18	0.82	0.24	1.67	20	16	24
250.00	1.25	3	3	250.00	251.99	82.91	739.72	0.67	0.17	1.41	16	15	18
250.00	1.25	3	3	2818.17	486.16	136.95	1451.68	0.72	0.21	1.45	18	15	21
250.00	1.25	3	4	6.25	111.79	34.21	378.55	0.83	0.23	1.67	23	19	27
250.00	1.25	3	4	250.00	246.62	90.41	695.98	0.71	0.17	1.48	19	18	21
250.00	1.25	3	4	2818.17	428.06	142.91	1247.28	0.75	0.21	1.56	21	18	24
250.00	1.25	3	5	6.25	119.21	37.09	385.39	0.84	0.22	1.76	26	22	30
250.00	1.25	3	5	250.00	250.00	91.84	665.19	0.74	0.19	1.56	22	21	24
250.00	1.25	3	5	2818.17	412.91	142.24	1160.12	0.75	0.21	1.56	24	21	27
250.00	1.25	4	3	6.25	101.48	33.68	326.00	0.87	0.34	1.56	27	22	32
250.00	1.25	4	3	250.00	249.16	96.49	619.84	0.74	0.30	1.33	22	20	24
250.00	1.25	4	3	2818.17	471.35	176.68	1202.10	0.78	0.30	1.38	23	20	27
250.00	1.25	4	4	6.25	107.22	39.64	315.57	0.89	0.35	1.59	30	26	35
250.00	1.25	4	4	250.00	247.45	97.87	609.06	0.76	0.29	1.37	26	24	28
250.00	1.25	4	4	2818.17	427.51	167.36	1055.00	0.81	0.31	1.44	27	25	31
250.00	1.25	4	5	6.25	122.25	45.30	340.84	0.90	0.34	1.63	34	30	39
250.00	1.25	4	5	250.00	249.42	104.85	577.56	0.79	0.31	1.42	30	28	32
250.00	1.25	4	5	2818.17	402.63	157.05	964.91	0.83	0.32	1.45	32	29	36
250.00	1.25	5	3	6.25	98.01	36.31	271.41	0.90	0.42	1.48	33	28	38
250.00	1.25	5	3	250.00	252.60	107.47	576.64	0.75	0.35	1.26	27	25	30
250.00	1.25	5	3	2818.17	462.38	192.31	1056.57	0.79	0.37	1.30	29	26	33
250.00	1.25	5	4	6.25	110.13	44.38	285.78	0.92	0.44	1.50	38	34	43
250.00	1.25	5	4	250.00	244.95	111.13	565.71	0.78	0.37	1.30	32	30	35
250.00	1.25	5	4	2818.17	432.02	176.86	979.38	0.82	0.38	1.36	34	31	38
250.00	1.25	5	5	6.25	124.00	47.62	301.92	0.93	0.43	1.52	43	38	48
250.00	1.25	5	5	250.00	250.83	115.74	546.36	0.81	0.38	1.35	37	35	40
250.00	1.25	5	5	2818.17	401.74	179.31	879.24	0.84	0.39	1.37	39	36	43

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
250.00	2.00	3	3	1.00	32.53	7.50	203.73	1.07	0.28	2.14	20	16	25
250.00	2.00	3	3	250.00	240.32	63.62	849.52	0.82	0.20	1.73	16	15	19
250.00	2.00	3	3	5000.00	662.45	162.33	2190.88	0.81	0.21	1.78	17	15	21
250.00	2.00	3	4	1.00	40.35	9.04	234.48	1.11	0.29	2.21	23	19	28
250.00	2.00	3	4	250.00	250.33	67.34	900.88	0.90	0.24	1.83	19	18	22
250.00	2.00	3	4	5000.00	608.75	157.05	1938.58	0.88	0.23	1.85	20	18	24
250.00	2.00	3	5	1.00	46.21	11.14	224.67	1.13	0.31	2.33	26	22	31
250.00	2.00	3	5	250.00	242.54	67.97	847.27	0.94	0.26	1.92	22	21	25
250.00	2.00	3	5	5000.00	567.13	149.60	1771.08	0.91	0.26	1.90	23	21	27
250.00	2.00	4	3	1.00	35.61	9.71	165.37	1.12	0.45	2.01	27	22	33
250.00	2.00	4	3	250.00	242.51	79.61	750.18	0.89	0.34	1.65	22	20	25
250.00	2.00	4	3	5000.00	634.96	187.61	1783.87	0.88	0.32	1.61	23	20	27
250.00	2.00	4	4	1.00	40.97	11.00	169.62	1.16	0.46	2.05	31	26	36
250.00	2.00	4	4	250.00	246.67	78.26	766.37	0.95	0.35	1.69	26	24	29
250.00	2.00	4	4	5000.00	607.81	183.44	1631.58	0.93	0.37	1.73	27	24	31
250.00	2.00	4	5	1.00	46.87	13.04	188.78	1.18	0.44	2.09	34	30	40
250.00	2.00	4	5	250.00	240.87	84.80	692.00	0.97	0.38	1.79	30	28	33
250.00	2.00	4	5	5000.00	557.16	172.03	1558.22	0.98	0.38	1.80	31	28	35
250.00	2.00	5	3	1.00	34.87	10.33	139.12	1.14	0.51	1.89	33	28	40
250.00	2.00	5	3	250.00	250.11	88.29	678.14	0.91	0.41	1.54	28	25	31
250.00	2.00	5	3	5000.00	640.89	215.51	1589.16	0.91	0.40	1.59	29	26	33
250.00	2.00	5	4	1.00	42.77	13.65	148.39	1.20	0.56	1.95	38	33	44
250.00	2.00	5	4	250.00	244.78	91.34	637.10	0.98	0.46	1.61	33	30	36
250.00	2.00	5	4	5000.00	582.56	199.65	1458.51	0.96	0.46	1.62	34	31	38
250.00	2.00	5	5	1.00	48.83	15.08	154.48	1.26	0.57	2.03	43	38	49
250.00	2.00	5	5	250.00	249.97	95.14	644.22	1.02	0.49	1.69	38	35	41
250.00	2.00	5	5	5000.00	543.51	196.45	1366.70	0.99	0.46	1.70	39	35	43

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1500.00	0.12	3	3	1052.70	1705.97	1250.40	2516.41	0.27	0.09	0.51	15	15	16
1500.00	0.12	3	3	1500.00	1620.21	1176.54	2113.36	0.39	0.14	0.53	15	15	15
1500.00	0.12	3	3	1892.72	1453.51	990.09	1890.36	0.29	0.07	0.49	15	15	15
1500.00	0.12	3	4	1052.70	1551.14	1183.19	2060.46	0.23	0.05	0.38	18	18	19
1500.00	0.12	3	4	1500.00	1514.89	1288.14	1971.70	0.24	0.05	0.39	18	18	18
1500.00	0.12	3	4	1892.72	1580.55	1216.89	1823.24	0.19	0.03	0.34	18	18	18
1500.00	0.12	3	5	1052.70	1732.31	1323.60	2192.27	0.25	0.07	0.54	21	21	22
1500.00	0.12	3	5	1500.00	1562.80	1217.58	2071.26	0.38	0.15	0.54	21	21	21
1500.00	0.12	3	5	1892.72	1422.94	1120.94	1827.25	0.23	0.05	0.51	21	21	21
1500.00	0.12	4	3	1052.70	1808.06	1353.17	2314.70	0.27	0.17	0.47	20	20	21
1500.00	0.12	4	3	1500.00	1594.22	1183.32	2155.70	0.36	0.19	0.51	20	20	20
1500.00	0.12	4	3	1892.72	1205.88	1068.25	1480.85	0.14	0.05	0.30	20	20	21
1500.00	0.12	4	4	1052.70	1683.55	1344.08	2065.92	0.25	0.12	0.37	24	24	25
1500.00	0.12	4	4	1500.00	1610.92	1295.86	1967.29	0.25	0.11	0.35	24	24	24
1500.00	0.12	4	4	1892.72	1478.40	1237.56	1633.61	0.15	0.05	0.26	24	24	25
1500.00	0.12	4	5	1052.70	1781.27	1390.90	2222.08	0.29	0.15	0.49	28	28	29
1500.00	0.12	4	5	1500.00	1604.94	1269.97	1993.84	0.33	0.17	0.47	28	28	28
1500.00	0.12	4	5	1892.72	1249.42	1137.27	1521.50	0.16	0.06	0.29	28	28	29
1500.00	0.12	5	3	1052.70	1775.09	1371.89	2265.62	0.27	0.14	0.42	25	25	26
1500.00	0.12	5	3	1500.00	1216.54	1015.60	1527.45	0.18	0.07	0.39	25	25	26
1500.00	0.12	5	3	1892.72	1216.54	1015.60	1520.61	0.18	0.07	0.38	25	25	25
1500.00	0.12	5	4	1052.70	1561.75	1298.21	1914.79	0.24	0.10	0.33	30	30	31
1500.00	0.12	5	4	1500.00	1473.78	1249.30	1710.13	0.15	0.07	0.27	30	30	31
1500.00	0.12	5	4	1892.72	1473.78	1272.68	1714.17	0.15	0.07	0.27	30	30	31
1500.00	0.12	5	5	1052.70	1703.55	1382.57	2065.53	0.27	0.12	0.41	35	35	36
1500.00	0.12	5	5	1500.00	1282.08	1085.89	1530.83	0.18	0.07	0.33	35	35	36
1500.00	0.12	5	5	1892.72	1282.08	1085.89	1523.04	0.17	0.08	0.32	35	35	36

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1500.00	0.25	3	3	717.30	1693.74	1106.18	2552.13	0.29	0.07	0.55	16	15	17
1500.00	0.25	3	3	1500.00	1548.72	941.53	2372.38	0.33	0.09	0.59	15	15	16
1500.00	0.25	3	3	2434.99	1326.67	928.45	2022.16	0.22	0.07	0.52	15	15	16
1500.00	0.25	3	4	717.30	1591.61	1061.59	2288.06	0.26	0.06	0.53	19	18	20
1500.00	0.25	3	4	1500.00	1514.89	1056.05	2165.15	0.25	0.08	0.51	18	18	19
1500.00	0.25	3	4	2434.99	1449.71	966.73	2026.46	0.24	0.07	0.50	18	18	20
1500.00	0.25	3	5	717.30	1607.61	1143.28	2257.80	0.26	0.07	0.52	22	21	23
1500.00	0.25	3	5	1500.00	1533.95	1064.46	2183.94	0.29	0.09	0.55	21	21	22
1500.00	0.25	3	5	2434.99	1355.05	994.24	1906.67	0.22	0.07	0.51	21	21	22
1500.00	0.25	4	3	717.30	1669.66	1144.40	2334.71	0.28	0.11	0.51	21	20	22
1500.00	0.25	4	3	1500.00	1542.79	1027.33	2231.72	0.33	0.14	0.54	20	20	21
1500.00	0.25	4	3	2434.99	1339.88	957.39	1916.79	0.28	0.10	0.52	20	20	22
1500.00	0.25	4	4	717.30	1566.39	1113.73	2165.67	0.28	0.11	0.50	25	24	26
1500.00	0.25	4	4	1500.00	1534.02	1101.30	2048.35	0.27	0.10	0.49	24	24	25
1500.00	0.25	4	4	2434.99	1465.55	1055.07	1918.79	0.26	0.09	0.48	24	24	26
1500.00	0.25	4	5	717.30	1616.25	1188.41	2181.61	0.27	0.11	0.48	29	28	30
1500.00	0.25	4	5	1500.00	1529.49	1092.52	2107.27	0.31	0.13	0.52	28	28	29
1500.00	0.25	4	5	2434.99	1376.42	1038.04	1887.03	0.27	0.10	0.49	28	28	30
1500.00	0.25	5	3	717.30	1702.96	1213.32	2336.81	0.30	0.14	0.50	26	25	28
1500.00	0.25	5	3	1500.00	1368.32	999.99	1913.12	0.29	0.13	0.48	25	25	27
1500.00	0.25	5	3	2434.99	1367.61	997.11	1878.15	0.29	0.13	0.48	25	25	27
1500.00	0.25	5	4	717.30	1599.28	1178.55	2111.75	0.28	0.14	0.48	31	30	33
1500.00	0.25	5	4	1500.00	1469.58	1099.22	1929.18	0.28	0.11	0.47	30	30	32
1500.00	0.25	5	4	2434.99	1449.65	1093.17	1917.74	0.27	0.12	0.45	30	30	32
1500.00	0.25	5	5	717.30	1645.72	1245.57	2118.60	0.29	0.13	0.47	36	35	38
1500.00	0.25	5	5	1500.00	1400.30	1080.70	1834.55	0.28	0.13	0.46	35	35	37
1500.00	0.25	5	5	2434.99	1394.42	1064.52	1852.22	0.29	0.12	0.47	35	35	37

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1500.00	0.50	3	3	343.02	1432.00	765.72	2694.29	0.41	0.12	0.86	17	15	19
1500.00	0.50	3	3	1500.00	1468.15	780.73	2757.22	0.39	0.12	0.85	15	15	17
1500.00	0.50	3	3	3952.77	1465.60	774.22	2694.43	0.39	0.09	0.81	16	15	17
1500.00	0.50	3	4	343.02	1456.40	794.35	2619.70	0.41	0.11	0.84	20	18	22
1500.00	0.50	3	4	1500.00	1495.09	830.35	2706.83	0.40	0.11	0.84	18	18	20
1500.00	0.50	3	4	3952.77	1483.05	786.44	2664.00	0.40	0.11	0.84	19	18	20
1500.00	0.50	3	5	343.02	1460.79	804.57	2530.37	0.41	0.11	0.84	23	21	25
1500.00	0.50	3	5	1500.00	1486.81	873.06	2595.99	0.40	0.11	0.83	21	21	23
1500.00	0.50	3	5	3952.77	1466.78	865.33	2510.51	0.41	0.10	0.83	22	21	23
1500.00	0.50	4	3	343.02	1451.28	820.83	2511.62	0.44	0.18	0.79	23	21	25
1500.00	0.50	4	3	1500.00	1454.60	846.16	2574.62	0.44	0.17	0.77	21	20	22
1500.00	0.50	4	3	3952.77	1456.55	869.33	2509.80	0.42	0.16	0.77	21	20	23
1500.00	0.50	4	4	343.02	1472.49	861.56	2422.42	0.43	0.17	0.78	27	25	29
1500.00	0.50	4	4	1500.00	1506.66	904.91	2488.48	0.43	0.16	0.77	25	24	26
1500.00	0.50	4	4	3952.77	1480.19	890.30	2402.86	0.43	0.16	0.75	25	24	27
1500.00	0.50	4	5	343.02	1474.05	902.85	2333.36	0.45	0.18	0.80	31	29	33
1500.00	0.50	4	5	1500.00	1487.03	922.85	2354.33	0.43	0.16	0.80	29	28	30
1500.00	0.50	4	5	3952.77	1484.13	922.64	2347.98	0.42	0.16	0.76	29	28	31
1500.00	0.50	5	3	343.02	1439.53	878.59	2377.95	0.45	0.21	0.73	28	26	31
1500.00	0.50	5	3	1500.00	1478.48	903.85	2397.92	0.44	0.21	0.72	26	25	28
1500.00	0.50	5	3	3952.77	1465.55	903.92	2336.05	0.44	0.20	0.73	26	25	28
1500.00	0.50	5	4	343.02	1454.40	907.03	2311.00	0.45	0.20	0.75	33	31	36
1500.00	0.50	5	4	1500.00	1476.38	943.60	2267.89	0.44	0.20	0.73	31	30	33
1500.00	0.50	5	4	3952.77	1497.29	943.79	2327.92	0.44	0.21	0.72	31	30	33
1500.00	0.50	5	5	343.02	1464.06	948.14	2185.18	0.44	0.21	0.75	38	36	41
1500.00	0.50	5	5	1500.00	1486.90	960.84	2243.35	0.45	0.21	0.75	36	35	38
1500.00	0.50	5	5	3952.77	1475.96	968.87	2262.31	0.44	0.19	0.72	36	35	38

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1500.00	1.25	3	3	37.51	579.38	166.76	2018.56	0.82	0.23	1.55	20	16	24
1500.00	1.25	3	3	1500.00	1400.39	494.00	3514.40	0.61	0.17	1.29	16	15	18
1500.00	1.25	3	3	5000.00	1634.11	574.33	3906.21	0.59	0.16	1.23	16	15	19
1500.00	1.25	3	4	37.51	641.59	209.63	2046.33	0.81	0.21	1.61	23	19	27
1500.00	1.25	3	4	1500.00	1403.48	529.50	3345.04	0.64	0.19	1.31	19	17	21
1500.00	1.25	3	4	5000.00	1574.36	597.93	3849.48	0.61	0.18	1.30	19	18	22
1500.00	1.25	3	5	37.51	704.61	227.97	2037.50	0.79	0.22	1.62	26	22	30
1500.00	1.25	3	5	1500.00	1363.73	505.32	3363.71	0.65	0.17	1.35	22	20	24
1500.00	1.25	3	5	5000.00	1566.24	622.41	3509.09	0.65	0.18	1.34	22	21	25
1500.00	1.25	4	3	37.51	571.43	200.01	1710.67	0.85	0.33	1.46	26	22	31
1500.00	1.25	4	3	1500.00	1396.21	577.28	3035.81	0.67	0.27	1.16	21	20	24
1500.00	1.25	4	3	5000.00	1591.56	663.55	3374.21	0.64	0.25	1.19	22	20	24
1500.00	1.25	4	4	37.51	659.86	233.72	1663.63	0.87	0.34	1.51	30	26	35
1500.00	1.25	4	4	1500.00	1370.10	611.01	2965.77	0.70	0.28	1.22	25	24	28
1500.00	1.25	4	4	5000.00	1575.38	666.21	3178.49	0.67	0.26	1.21	26	24	28
1500.00	1.25	4	5	37.51	715.61	263.21	1736.83	0.88	0.34	1.53	34	30	39
1500.00	1.25	4	5	1500.00	1402.97	597.66	2836.65	0.71	0.29	1.29	29	27	32
1500.00	1.25	4	5	5000.00	1498.12	652.62	2989.27	0.69	0.27	1.27	30	27	32
1500.00	1.25	5	3	37.51	563.36	222.17	1442.34	0.90	0.42	1.41	33	28	38
1500.00	1.25	5	3	1500.00	1543.38	695.74	3128.99	0.67	0.30	1.12	27	25	30
1500.00	1.25	5	3	5000.00	1546.40	712.45	3063.04	0.65	0.30	1.10	27	25	30
1500.00	1.25	5	4	37.51	636.39	259.64	1554.79	0.89	0.44	1.43	38	33	43
1500.00	1.25	5	4	1500.00	1497.75	719.50	3007.22	0.70	0.33	1.16	32	30	35
1500.00	1.25	5	4	5000.00	1483.34	699.15	2913.66	0.68	0.33	1.19	32	30	35
1500.00	1.25	5	5	37.51	709.38	308.70	1639.49	0.90	0.45	1.45	43	38	48
1500.00	1.25	5	5	1500.00	1501.22	756.75	2875.69	0.72	0.34	1.22	37	34	40
1500.00	1.25	5	5	5000.00	1487.63	726.59	2820.87	0.72	0.34	1.20	37	34	40

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
1500.00	2.00	3	3	4.10	152.98	27.26	832.02	1.19	0.33	2.20	22	17	27
1500.00	2.00	3	3	1500.00	1320.31	408.52	3632.35	0.71	0.19	1.48	16	15	19
1500.00	2.00	3	3	5000.00	1650.05	484.04	4192.65	0.68	0.19	1.46	16	15	19
1500.00	2.00	3	4	4.10	183.31	37.16	965.62	1.21	0.32	2.34	25	20	30
1500.00	2.00	3	4	1500.00	1307.19	398.13	3533.58	0.76	0.22	1.59	19	17	22
1500.00	2.00	3	4	5000.00	1592.07	507.86	4214.70	0.71	0.18	1.57	19	17	22
1500.00	2.00	3	5	4.10	219.09	44.95	1111.91	1.20	0.33	2.39	28	23	33
1500.00	2.00	3	5	1500.00	1263.96	386.60	3421.87	0.81	0.22	1.63	22	19	25
1500.00	2.00	3	5	5000.00	1582.85	484.18	3971.57	0.75	0.20	1.59	22	19	25
1500.00	2.00	4	3	4.10	146.91	31.36	763.90	1.26	0.51	2.06	29	23	35
1500.00	2.00	4	3	1500.00	1302.14	466.21	3253.94	0.76	0.30	1.43	22	20	25
1500.00	2.00	4	3	5000.00	1555.33	544.29	3650.06	0.73	0.28	1.39	22	20	25
1500.00	2.00	4	4	4.10	182.89	45.86	804.64	1.25	0.51	2.11	33	27	39
1500.00	2.00	4	4	1500.00	1298.91	460.94	3210.44	0.81	0.32	1.47	26	23	29
1500.00	2.00	4	4	5000.00	1537.08	554.77	3732.27	0.74	0.28	1.46	26	23	29
1500.00	2.00	4	5	4.10	220.02	52.97	872.30	1.29	0.51	2.17	37	31	43
1500.00	2.00	4	5	1500.00	1268.22	474.06	3051.80	0.86	0.34	1.55	30	26	33
1500.00	2.00	4	5	5000.00	1497.67	558.58	3360.89	0.81	0.32	1.53	30	26	33
1500.00	2.00	5	3	4.10	150.39	39.51	625.28	1.27	0.64	1.97	36	30	43
1500.00	2.00	5	3	1500.00	1530.98	591.11	3300.14	0.76	0.34	1.32	27	25	31
1500.00	2.00	5	3	5000.00	1539.54	580.40	3431.21	0.76	0.34	1.32	27	25	31
1500.00	2.00	5	4	4.10	180.30	48.86	663.08	1.30	0.60	2.00	41	35	48
1500.00	2.00	5	4	1500.00	1506.56	608.39	3164.65	0.82	0.37	1.40	32	29	36
1500.00	2.00	5	4	5000.00	1500.60	600.97	3190.14	0.80	0.38	1.38	32	29	36
1500.00	2.00	5	5	4.10	214.52	63.28	742.84	1.31	0.65	2.04	46	39	53
1500.00	2.00	5	5	1500.00	1472.89	579.91	3076.81	0.83	0.37	1.44	37	33	41
1500.00	2.00	5	5	5000.00	1496.16	624.28	3195.65	0.85	0.39	1.45	37	33	41

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
3000.00	0.12	3	3	2105.40	3059.12	2144.18	4395.22	0.24	0.06	0.49	15	15	16
3000.00	0.12	3	3	3000.00	3059.12	2151.99	4406.87	0.25	0.06	0.49	15	15	16
3000.00	0.12	3	3	3785.44	3059.12	2144.18	4440.35	0.25	0.06	0.49	15	15	16
3000.00	0.12	3	4	2105.40	2748.52	2240.69	3643.38	0.18	0.06	0.37	18	18	19
3000.00	0.12	3	4	3000.00	2748.52	2240.69	3643.38	0.18	0.06	0.37	18	18	19
3000.00	0.12	3	4	3785.44	2748.52	2232.86	3643.38	0.18	0.06	0.38	18	18	19
3000.00	0.12	3	5	2105.40	2989.50	2294.59	3988.93	0.21	0.06	0.43	21	21	22
3000.00	0.12	3	5	3000.00	3038.66	2290.59	4032.35	0.21	0.06	0.43	21	21	22
3000.00	0.12	3	5	3785.44	3040.97	2284.32	4032.35	0.21	0.06	0.43	21	21	22
3000.00	0.12	4	3	2105.40	3244.05	2454.32	4158.52	0.24	0.08	0.43	20	20	21
3000.00	0.12	4	3	3000.00	3244.05	2318.67	4148.41	0.24	0.08	0.43	20	20	21
3000.00	0.12	4	3	3785.44	3244.05	2318.67	4142.86	0.23	0.08	0.43	20	20	21
3000.00	0.12	4	4	2105.40	2831.36	2398.70	3530.65	0.16	0.05	0.34	24	24	25
3000.00	0.12	4	4	3000.00	2831.36	2397.81	3508.90	0.17	0.07	0.34	24	24	25
3000.00	0.12	4	4	3785.44	2831.36	2397.34	3500.25	0.17	0.07	0.34	24	24	25
3000.00	0.12	4	5	2105.40	3120.86	2441.18	3861.76	0.22	0.07	0.39	28	28	29
3000.00	0.12	4	5	3000.00	3119.59	2448.90	3893.21	0.21	0.08	0.39	28	28	29
3000.00	0.12	4	5	3785.44	3120.22	2448.90	3916.54	0.22	0.08	0.39	28	28	29
3000.00	0.12	5	3	2105.40	3326.91	2541.28	4067.88	0.23	0.10	0.39	25	25	26
3000.00	0.12	5	3	3000.00	3326.91	2540.62	4066.24	0.23	0.10	0.40	25	25	26
3000.00	0.12	5	3	3785.44	3322.93	2543.74	4066.24	0.23	0.09	0.40	25	25	26
3000.00	0.12	5	4	2105.40	2860.18	2394.36	3513.92	0.16	0.08	0.32	30	30	31
3000.00	0.12	5	4	3000.00	2860.18	2395.70	3427.73	0.16	0.08	0.31	30	30	31
3000.00	0.12	5	4	3785.44	2862.90	2385.81	3430.84	0.16	0.08	0.32	30	30	31
3000.00	0.12	5	5	2105.40	3188.86	2618.02	3778.22	0.20	0.09	0.36	35	35	36
3000.00	0.12	5	5	3000.00	3187.77	2608.87	3762.61	0.20	0.09	0.36	35	35	36
3000.00	0.12	5	5	3785.44	3177.56	2603.21	3773.40	0.20	0.09	0.36	35	35	36

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
3000.00	0.25	3	3	1434.61	3243.36	2156.96	4630.53	0.22	0.08	0.54	15	15	17
3000.00	0.25	3	3	3000.00	3029.12	1898.33	4726.45	0.30	0.08	0.61	15	15	17
3000.00	0.25	3	3	4869.97	3015.72	1888.34	4738.92	0.30	0.08	0.59	15	15	17
3000.00	0.25	3	4	1434.61	2984.88	2068.30	4558.38	0.29	0.08	0.56	18	18	20
3000.00	0.25	3	4	3000.00	2966.47	2012.54	4471.08	0.27	0.07	0.55	18	18	20
3000.00	0.25	3	4	4869.97	2989.37	2026.46	4412.32	0.27	0.07	0.55	18	18	20
3000.00	0.25	3	5	1434.61	3146.32	2226.57	4397.39	0.24	0.06	0.53	21	21	23
3000.00	0.25	3	5	3000.00	3021.39	2049.31	4316.45	0.28	0.06	0.58	21	21	23
3000.00	0.25	3	5	4869.97	3017.91	1971.87	4385.03	0.28	0.07	0.57	21	21	23
3000.00	0.25	4	3	1434.61	3215.70	2293.37	4546.37	0.25	0.09	0.51	21	20	22
3000.00	0.25	4	3	3000.00	3050.07	2068.86	4442.57	0.31	0.12	0.55	20	20	22
3000.00	0.25	4	3	4869.97	3060.06	2074.24	4462.80	0.31	0.13	0.54	20	20	22
3000.00	0.25	4	4	1434.61	2987.63	2213.18	4218.94	0.30	0.10	0.51	24	24	26
3000.00	0.25	4	4	3000.00	2974.31	2087.58	4269.65	0.29	0.11	0.50	24	24	26
3000.00	0.25	4	4	4869.97	2980.73	2117.12	4196.00	0.29	0.11	0.51	24	24	26
3000.00	0.25	4	5	1434.61	3123.26	2342.46	4181.29	0.25	0.09	0.50	28	28	30
3000.00	0.25	4	5	3000.00	2995.73	2159.58	4185.52	0.29	0.11	0.54	28	28	30
3000.00	0.25	4	5	4869.97	3051.81	2158.12	4248.54	0.29	0.11	0.53	28	28	30
3000.00	0.25	5	3	1434.61	3093.53	2151.04	4309.94	0.31	0.14	0.54	26	25	27
3000.00	0.25	5	3	3000.00	3097.64	2167.16	4269.67	0.32	0.14	0.52	25	25	28
3000.00	0.25	5	3	4869.97	3101.84	2162.79	4301.72	0.31	0.14	0.54	25	25	27
3000.00	0.25	5	4	1434.61	2996.26	2206.74	4068.32	0.31	0.13	0.50	30	30	32
3000.00	0.25	5	4	3000.00	2992.29	2207.90	4096.80	0.30	0.13	0.51	30	30	33
3000.00	0.25	5	4	4869.97	2988.14	2211.98	4140.89	0.30	0.14	0.50	30	30	32
3000.00	0.25	5	5	1434.61	3079.08	2275.41	4076.04	0.30	0.13	0.50	35	35	38
3000.00	0.25	5	5	3000.00	3078.41	2260.86	4066.23	0.30	0.14	0.51	35	35	37
3000.00	0.25	5	5	4869.97	3063.03	2297.94	4035.23	0.30	0.14	0.50	35	35	37

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
3000.00	0.50	3	3	686.03	2832.54	1475.33	5109.18	0.40	0.10	0.84	17	15	19
3000.00	0.50	3	3	3000.00	2844.89	1486.12	5188.15	0.38	0.10	0.80	16	15	17
3000.00	0.50	3	3	5000.00	2845.00	1536.15	5086.62	0.39	0.10	0.80	16	15	18
3000.00	0.50	3	4	686.03	2870.47	1540.45	4946.55	0.39	0.11	0.81	20	18	22
3000.00	0.50	3	4	3000.00	2920.37	1624.72	5033.43	0.39	0.11	0.81	18	18	20
3000.00	0.50	3	4	5000.00	2825.95	1614.05	4857.96	0.37	0.10	0.79	19	18	20
3000.00	0.50	3	5	686.03	2899.01	1658.66	4886.58	0.40	0.12	0.84	23	20	25
3000.00	0.50	3	5	3000.00	2883.44	1680.19	4860.67	0.39	0.11	0.81	22	19	23
3000.00	0.50	3	5	5000.00	2876.61	1658.08	4812.74	0.39	0.11	0.79	22	20	24
3000.00	0.50	4	3	686.03	2833.89	1627.19	4729.75	0.42	0.16	0.76	23	21	25
3000.00	0.50	4	3	3000.00	2850.57	1679.91	4789.89	0.42	0.15	0.75	21	20	23
3000.00	0.50	4	3	5000.00	2882.04	1656.00	4758.27	0.42	0.16	0.74	21	20	23
3000.00	0.50	4	4	686.03	2858.05	1724.07	4674.24	0.42	0.16	0.77	26	24	30
3000.00	0.50	4	4	3000.00	2832.30	1747.58	4567.06	0.41	0.16	0.74	25	23	27
3000.00	0.50	4	4	5000.00	2902.10	1752.64	4636.47	0.40	0.15	0.74	25	23	27
3000.00	0.50	4	5	686.03	2897.20	1827.13	4548.06	0.42	0.17	0.76	30	28	33
3000.00	0.50	4	5	3000.00	2902.72	1839.02	4465.21	0.42	0.16	0.78	29	26	31
3000.00	0.50	4	5	5000.00	2916.42	1823.91	4568.79	0.42	0.16	0.76	29	26	31
3000.00	0.50	5	3	686.03	2769.47	1750.95	4504.77	0.43	0.20	0.73	28	26	32
3000.00	0.50	5	3	3000.00	2834.79	1780.33	4511.24	0.43	0.19	0.71	26	25	29
3000.00	0.50	5	3	5000.00	2856.77	1765.04	4453.18	0.43	0.20	0.71	26	25	29
3000.00	0.50	5	4	686.03	2878.40	1815.11	4423.36	0.44	0.20	0.73	33	31	37
3000.00	0.50	5	4	3000.00	2900.34	1827.23	4444.59	0.42	0.20	0.72	31	29	33
3000.00	0.50	5	4	5000.00	2860.13	1819.07	4433.70	0.42	0.19	0.72	31	29	33
3000.00	0.50	5	5	686.03	2886.73	1936.49	4317.17	0.44	0.20	0.73	38	35	41
3000.00	0.50	5	5	3000.00	2897.12	1892.65	4328.08	0.43	0.20	0.71	36	33	39
3000.00	0.50	5	5	5000.00	2911.80	1908.87	4326.98	0.43	0.19	0.72	36	33	38

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
3000.00	1.25	3	3	75.02	1106.89	342.51	3291.87	0.78	0.23	1.51	19	16	23
3000.00	1.25	3	3	3000.00	2416.90	938.47	5212.46	0.55	0.13	1.15	16	14	18
3000.00	1.25	3	3	5000.00	2411.16	934.31	5231.81	0.55	0.13	1.14	16	14	18
3000.00	1.25	3	4	75.02	1226.10	391.92	3524.23	0.76	0.21	1.49	22	19	26
3000.00	1.25	3	4	3000.00	2463.47	979.90	5251.35	0.56	0.15	1.21	19	17	21
3000.00	1.25	3	4	5000.00	2485.98	975.82	5256.23	0.56	0.14	1.20	19	16	21
3000.00	1.25	3	5	75.02	1382.46	460.86	3568.65	0.74	0.20	1.52	25	22	30
3000.00	1.25	3	5	3000.00	2450.76	997.86	5007.53	0.58	0.15	1.25	22	18	24
3000.00	1.25	3	5	5000.00	2450.19	1002.98	5080.98	0.57	0.15	1.23	22	18	24
3000.00	1.25	4	3	75.02	1091.13	396.79	3001.32	0.82	0.32	1.38	26	22	31
3000.00	1.25	4	3	3000.00	2352.62	1095.53	4647.38	0.59	0.23	1.07	21	19	24
3000.00	1.25	4	3	5000.00	2351.43	1053.05	4769.63	0.59	0.20	1.08	21	20	24
3000.00	1.25	4	4	75.02	1196.23	450.42	3021.64	0.82	0.32	1.39	30	26	35
3000.00	1.25	4	4	3000.00	2399.31	1112.08	4674.17	0.61	0.22	1.11	25	23	28
3000.00	1.25	4	4	5000.00	2362.47	1117.30	4664.20	0.62	0.23	1.14	25	22	28
3000.00	1.25	4	5	75.02	1311.86	525.83	3087.22	0.81	0.33	1.41	34	30	39
3000.00	1.25	4	5	3000.00	2380.65	1115.59	4525.27	0.63	0.25	1.19	29	26	32
3000.00	1.25	4	5	5000.00	2401.49	1086.82	4509.64	0.62	0.24	1.16	29	26	32
3000.00	1.25	5	3	75.02	1097.66	436.92	2627.26	0.83	0.40	1.33	33	28	38
3000.00	1.25	5	3	3000.00	2344.19	1100.36	4391.54	0.61	0.27	1.04	27	25	30
3000.00	1.25	5	3	5000.00	2333.04	1134.19	4387.53	0.60	0.27	1.03	27	25	29
3000.00	1.25	5	4	75.02	1215.84	515.21	2843.24	0.84	0.39	1.32	38	33	42
3000.00	1.25	5	4	3000.00	2299.65	1158.76	4300.75	0.62	0.30	1.08	32	29	35
3000.00	1.25	5	4	5000.00	2341.81	1141.99	4274.53	0.63	0.28	1.06	32	29	35
3000.00	1.25	5	5	75.02	1330.84	601.72	2844.11	0.84	0.41	1.36	42	38	47
3000.00	1.25	5	5	3000.00	2344.83	1146.31	4166.88	0.64	0.29	1.09	37	33	39
3000.00	1.25	5	5	5000.00	2327.64	1186.26	4163.59	0.65	0.29	1.10	37	33	40

Table IX

True LD50	True Sigma	# of runs	# of animals after reversal	Prelim. starting dose *	Median LD50	LD50 5%	LD50 95%	Median Sigma	Sigma 5%	Sigma 95%	Median # of animals	# of animals 5%	# of animals 95%
3000.00	2.00	3	3	8.20	298.46	53.65	1649.57	1.16	0.31	2.12	22	17	27
3000.00	2.00	3	3	3000.00	2241.15	692.21	5315.09	0.62	0.17	1.35	16	14	19
3000.00	2.00	3	3	5000.00	2242.02	673.97	5382.67	0.60	0.14	1.34	16	14	19
3000.00	2.00	3	4	8.20	352.76	72.57	1686.22	1.16	0.33	2.21	24	20	30
3000.00	2.00	3	4	3000.00	2135.08	692.61	5021.90	0.65	0.17	1.44	19	17	22
3000.00	2.00	3	4	5000.00	2203.57	700.00	5179.08	0.64	0.17	1.44	19	17	22
3000.00	2.00	3	5	8.20	414.35	88.61	1900.05	1.17	0.32	2.22	27	23	33
3000.00	2.00	3	5	3000.00	2119.79	771.67	5088.56	0.69	0.17	1.52	22	19	25
3000.00	2.00	3	5	5000.00	2214.19	700.75	5092.09	0.68	0.16	1.47	22	18	25
3000.00	2.00	4	3	8.20	291.38	64.44	1264.48	1.20	0.47	1.98	29	23	35
3000.00	2.00	4	3	3000.00	2101.12	811.34	4630.36	0.68	0.23	1.33	22	20	25
3000.00	2.00	4	3	5000.00	2141.00	807.73	4775.54	0.68	0.24	1.30	22	20	25
3000.00	2.00	4	4	8.20	345.33	83.49	1394.80	1.24	0.48	2.05	33	27	39
3000.00	2.00	4	4	3000.00	2073.28	806.67	4405.42	0.71	0.27	1.35	26	22	29
3000.00	2.00	4	4	5000.00	2103.24	845.05	4508.86	0.71	0.26	1.37	26	22	29
3000.00	2.00	4	5	8.20	421.56	110.94	1503.86	1.27	0.50	2.10	37	31	42
3000.00	2.00	4	5	3000.00	2081.46	822.96	4349.82	0.76	0.27	1.43	30	26	33
3000.00	2.00	4	5	5000.00	2095.36	823.15	4375.30	0.74	0.27	1.41	30	26	32
3000.00	2.00	5	3	8.20	298.15	77.34	1094.71	1.24	0.60	1.90	36	30	43
3000.00	2.00	5	3	3000.00	2062.01	893.37	4221.31	0.69	0.31	1.23	27	25	30
3000.00	2.00	5	3	5000.00	2067.09	899.72	4212.43	0.71	0.31	1.22	27	25	30
3000.00	2.00	5	4	8.20	350.27	100.98	1244.92	1.25	0.60	1.92	41	35	48
3000.00	2.00	5	4	3000.00	2044.50	896.16	3894.64	0.76	0.34	1.31	32	29	35
3000.00	2.00	5	4	5000.00	2041.39	890.41	4058.15	0.75	0.32	1.31	32	29	35
3000.00	2.00	5	5	8.20	413.44	122.43	1313.75	1.29	0.63	1.99	46	40	52
3000.00	2.00	5	5	3000.00	2017.02	873.18	3981.59	0.76	0.34	1.35	37	33	40
3000.00	2.00	5	5	5000.00	1998.48	880.20	3989.64	0.78	0.34	1.38	37	33	40

Simulation Table X. Simulation of Performance of Current OECD Test Guideline 425. The simulations in this table simulate the current OECD TG 425 guideline to test its ability to estimate LD50.

The actual LD50 and sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope and began the initial LD50 run at a series of different starting doses as indicated in the table. The tests were run according the current TG 425 guideline

Each line of the table represents one study design tested:

> Each line summarizes the results of 1000 simulated tests from a population with a true LD50 and sigma (reciprocal of slope) as detailed in the table.
>
> For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.
>
> Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when four animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this UDP run was 0.12, the default in the guideline.
>
> Final estimates of LD50 and slope were performed using the maximum likelihood method detailed in the guideline.
>
> For each line the median, 5% and 95% confidence limits of the results of 1000 separate simulation runs are presented. In this table the number of animals used were tracked and are presented for each study design.

Table X

"True" LD50 mg/kg	"True" Sigma	Starting Dose mg/kg	*Estimated LD50* Median	*Estimated LD50* 90% Range	*Animals Used* Median	*Animals Used* 90% Range
1.5	0.12	5	1.5	1.1 - 2.0	10	8 - 11
		50	1.5	1.2 - 2.0	18	16 - 19
		100	1.5	1.2 - 2.0	20	19 - 22
		300	1.5	1.2 - 1.9	24	23 - 26
		2000	1.5	1.2 - 1.9	31	30 - 33
	0.25	5	1.8	1.1 - 2.8	9	6 - 11
		50	1.7	1.1 - 3.1	17	14 - 20
		100	1.7	1.1 - 3.0	20	17 - 22
		300	1.7	1.1 - 2.9	24	21 - 26
		2000	1.8	1.1 - 3.1	31	28 - 33
	0.5	5	2.5	1.2 - 4.5	7	6 - 11
		50	2.8	1.2 - 8.4	15	10 - 19
		100	3.0	1.3 - 9.7	18	13 - 21
		300	2.9	1.2 - 9.6	21	16 - 26
		2000	3.1	1.3 - 9.3	28	23 - 32
	1.25	5	3.4	1.5 - 7.3	7	6 - 10
		50	15	2.8 - 38	9	6 - 16
		100	19	3.3 - 62	10	6 - 17
		300	25	3.7 - 155	13	6 - 21
		2000	31	3.7 - 443	19	9 - 28
50	0.12	5	49	38 - 64	14	12 - 15
		50	52	39 - 63	6	6 - 7
		100	49	39 - 68	8	6 - 9
		300	50	39 - 66	12	10 - 13
		2000	50	39 - 65	19	17 - 20
	0.25	5	43	25 - 69	13	10 - 15
		50	49	34 - 76	6	6 - 7
		100	58	37 - 87	7	6 - 9
		300	59	37 - 98	11	8 - 13
		2000	59	36 - 95	18	15 - 20
	0.5	5	26	10 - 64	11	6 - 15
		50	52	31 - 89	6	6 - 8
		100	68	36 - 115	7	6 - 9
		300	88	40 - 204	9	6 - 13
		2000	102	39 - 336	15	11 - 20
	1.25	5	10	4.5 - 32	7	6 - 12
		50	52	24 - 101	6	6 - 9
		100	83	37 - 162	6	6 - 9
		300	182	61 - 344	7	6 - 11
		2000	538	107 - 1513	9	6 - 16

Table X

"True" LD50 mg/kg	"True" Sigma	Starting Dose mg/kg	*Estimated LD50* Median	*Estimated LD50* 90% Range	*Animals Used* Median	*Animals Used* 90% Range
1500	0.12	5	1461	1168 - 1926	26	24 - 27
		50	1475	1161 - 1944	18	16 - 19
		100	1483	1140 - 1947	15	14 - 16
		300	1473	1148 - 1930	11	10 - 12
		2000	1508	1166 - 1909	6	6 - 8
	0.25	5	1345	752 - 2039	25	22 - 27
		50	1286	740 - 2058	17	14 - 19
		100	1287	776 - 2036	14	12 - 17
		300	1327	764 - 1941	10	8 - 13
		2000	1545	1036 - 2296	6	6 - 8
	0.5	5	819	261 - 1877	23	18 - 27
		50	782	226 - 1792	15	9 - 18
		100	784	260 - 1843	12	7 - 16
		300	846	422 - 1967	9	6 - 12
		2000	1742	990 - 2932	6	6 - 8
	1.25	5	90	10 - 638	15	6 - 23
		50	171	61 - 801	9	6 - 15
		100	232	105 - 922	8	6 - 13
		300	484	245 - 1354	7	6 - 10
		2000	1909	921 - 3861	6	6 - 9
3000	0.12	5	3081	2337 - 3835	28	27 - 30
		50	3033	2301 - 3839	20	19 - 21
		100	2949	2321 - 3888	18	16 - 19
		300	2930	2306 - 3862	14	12 - 15
		2000	2942	2296 - 3861	7	6 - 8
	0.25	5	2539	1461 - 4062	28	25 - 30
		50	2659	1530 - 3957	19	16 - 22
		100	2573	1481 - 4115	17	14 - 19
		300	2559	1471 - 4170	13	10 - 15
		2000	2815	1899 - 4166	6	6 - 8
	0.5	5	1433	471 - 3543	25	21 - 29
		50	1530	517 - 3505	17	12 - 21
		100	1592	451 - 3671	15	9 - 19
		300	1471	591 - 3561	11	6 - 14
		2000	2516	1418 - 4653	6	6 - 9
	1.25	5	156	13 - 1307	16	7 - 25
		50	226	73 - 1281	10	6 - 17
		100	329	121 - 1524	9	6 - 15
		300	585	263 - 1941	7	6 - 12
		2000	2273	1139 - 4878	6	6 - 9

Table X

"True" LD50 mg/kg	"True" Sigma	Starting Dose mg/kg	*Estimated LD50*		*Animals Used*	
			Median	**90% Range**	**Median**	**90% Range**
1.5	2.0	100	43	6.8 - 95	8	6 - 14
50	2.0	100	87	35 - 195	6	6 - 9
1500	2.0	100	165	82 - 603	7	6 - 11
3000	2.0	100	197	87 - 995	7	6 - 13

Simulation Table XI. Simulation of Up-and-Down Procedure with Progression of 0.5 dose. The simulations in this table simulate the first proposed revision of the guideline - the change of the default assumed sigma to 0.5 to test this new design's ability to estimate LD50 while not significantly increasing animal use .

The actual LD50 and sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope and began the initial LD50 run at a series of different starting doses as indicated in the table. The tests were run according the current TG 425 guideline except for the change in the default assumed sigma.

Each line of the table represents one study design tested:

> Each line summarizes the results of 1000 simulated tests from a population with a true LD50 and sigma (reciprocal of slope) as detailed in the table.
>
> For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.
>
> Initially a single standard up-and-down run was performed to estimate the LD50. This single run ended when four animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for this UDP run was 0.5.
>
> Final estimates of LD50 were performed using the maximum likelihood method detailed in the guideline.
>
> For each line the median, 5% and 95% confidence limits of the results of 1000 separate simulation runs are presented. In this table the number of animals used were tracked and are presented for each study design.

Table XI

"True" LD50 mg/kg	"True" Sigma	Starting Dose mg/kg	*Estimated LD50* Median	*Estimated LD50* 90% Range	*Animals Used* Median	*Animals Used* 90% Range
1.5	0.12	5	1.5	1.1 - 2.8	7	6 - 8
		50	1.4	0.93 - 2.7	9	8 - 9
		100	1.7	0.96 - 1.7	9	9 - 10
		300	1.6	0.94 - 1.6	10	10 - 11
		2000	1.3	0.79 - 1.7	12	11 - 13
	0.25	5	1.5	0.71 - 2.8	7	6 - 8
		50	1.4	0.67 - 2.7	9	8 - 10
		100	1.7	0.75 - 2.4	9	8 - 10
		300	1.6	0.74 - 2.3	10	9 - 12
		2000	1.3	0.65 - 2.5	12	11 - 13
	0.5	5	1.5	0.61 - 4.1	6	6 - 9
		50	1.5	0.60 - 4.8	8	7 - 11
		100	1.7	0.62 - 4.6	9	7 - 11
		300	1.6	0.61 - 5.1	10	8 - 12
		2000	1.4	0.63 - 4.1	12	10 - 14
	1.25	5	2.2	0.58 - 13	6	6 - 9
		50	3.7	0.60 - 28	7	6 - 10
		100	3.7	0.75 - 32	8	6 - 11
		300	4.0	0.74 - 40	9	6 - 12
		2000	3.8	0.63 - 44	10	7 - 14
50	0.12	5	52	30 - 94	7	7 - 8
		50	61	28 - 89	6	6
		100	56	34 - 56	6	6 - 7
		300	51	32 - 51	7	7
		2000	34	34 - 67	9	8 - 9
	0.25	5	52	30 - 94	8	7 - 8
		50	41	28 - 89	6	6
		100	56	24 - 82	6	6 - 7
		300	51	23 - 72	7	6 - 8
		2000	48	24 - 84	9	8 - 9
	0.5	5	47	16 - 134	7	6 - 9
		50	41	19 - 147	6	6 - 7
		100	56	20 - 121	6	6 - 7
		300	51	19 - 133	7	6 - 8
		2000	48	20 - 150	8	7 - 10
	1.25	5	25	4 - 245	7	6 - 9
		50	41	8 - 295	6	6 - 8
		100	56	9 - 320	6	6 - 8
		300	72	11 - 533	6	6 - 9
		2000	119	13 - 876	7	6 - 10

Table XI

"True" LD50 mg/kg	"True" Sigma	Starting Dose mg/kg	*Estimated LD50* Median	*Estimated LD50* 90% Range	*Animals Used* Median	*Animals Used* 90% Range
1500	0.12	5	1655	939 - 2968	10	10 - 11
		50	1655	938 - 2968	8	8 -9
		100	1877	1329 - 1877	8	7 -8
		300	1771	1247 - 1771	7	7
		2000	1125	1125 - 2271	6	6
	0.25	5	1655	939 - 2968	10	10 - 11
		50	1655	938 - 2968	8	8 -9
		100	1697	847 - 3311	8	7 -9
		300	1771	880 - 3136	7	6 - 8
		2000	1604	768 - 2271	6	6 - 7
	0.5	5	1342	523 - 4087	10	9 - 12
		50	1499	473 - 4021	8	7 - 10
		100	1550	485 - 4289	8	6 - 9
		300	1456	470 - 3337	7	6 - 8
		2000	1604	596 - 4092	6	6 - 7
	1.25	5	665	57 - 4087	9	6 - 12
		50	664	89 - 4087	7	6 - 10
		100	750	121 - 4507	7	6 - 9
		300	997	169 - 4577	6	6 - 8
		2000	1604	266 - 6451	6	6 - 8
3000	0.12	5	2968	2968 - 5235	11	11
		50	2968	2968 - 4087	9	9
		100	3311	1877 - 4319	8	8 - 9
		300	3136	1771 - 4167	7	7 - 8
		2000	3162	2271 - 5596	6	6
	0.25	5	2968	2103 - 6225	11	10 - 12
		50	2968	2103 - 6225	9	8 - 10
		100	3311	1877 - 6406	8	8 - 10
		300	3337	1771 - 6829	7	7 - 9
		2000	3162	1604 - 5914	6	6 - 7
	0.5	5	2968	939 - 7425	11	9 - 13
		50	2968	938 - 6693	9	7 - 11
		100	2762	947 - 7463	8	7 - 10
		300	3136	973 - 7346	7	6 - 9
		2000	3128	1114 - 7059	6	6 - 8
	1.25	5	1168	84 - 6693	10	6 - 13
		50	1190	162 - 6225	8	6 - 11
		100	1329	225 - 7463	7	6 - 10
		300	1609	247 - 7346	7	6 - 9
		2000	2271	412 - 8622	6	6 - 8

Simulation Table XII Multiple Up-and-Down Sequences - Probit Calculations. The simulations in this table explore a test design to estimate slope based on using probit analysis on the results of three full UDP runs each using five animals after the first reversal. The data from all runs was combined and a probit model was used to estimate the LD50 and slope from all the data. All the UDP runs were run in parallel with the results of each independent of the others.

All populations had a true LD50 of 250 mg/kg bw. The sigma of the dose response curve (reciprocal of slope) varied as detailed in the table. The hypothetical investigator did not know the true LD50 or slope, but began the initial LD50 run at 250 mg/kg bw based on data from other related compounds..

Each line of the table represents one study design tested:

Each line summarizes the results of 1000 simulated tests from a population with a true LD50 of 250 mg/kg bw and sigma (reciprocal of slope) as detailed in the table.

For each run the computer randomly picked the appropriate number of animals from the entire population assigning each individual animal an LD50 based on the known variability of the population.

Five animals were tested after the first reversal.

All runs were standard up-and-down runs performed to estimate the LD50. Each run ended when five animals had been dosed after the first reversal. Dosing boundaries were respected but no stopping rule was used. The assumed sigma for all runs was 0.5.

Final estimates of LD50 and slope were made by averaging the LD50's and slopes obtained from all the runs.

For each line the median, 5% and 95% confidence limits of the results of 1000 separate simulation runs are presented. In this table the number of animals used in the study were tracked and are presented for each study design.

Table XII

"True"		Estimated LD50			Estimated Sigma			Number of Animals Used		
True LD50	True Sigma	Median	5%	95%	Median	5%	95%	Median	5%	95%
250 mg/kg	0.12	250	206	303	0.0098	0.023	0.19	21	21	27
	All runs including 524 runs that did not converge									
250 mg/kg	0.12				0.135	0.105	0.21			
	Only includes the 476 runs that converge.									
250 mg/kg	2	236	23	2029	1.09	0.3	5.6	22	21	25
	Includes all runs									
250mg/kg	2				1.1	0.4	8.2			
	For 26 runs with negative slopes, sigma arbitrarily set to 1000 (rather than a negative value)									