

PA48: Blood and Tissue Concentration

Study Number: 108020004

Test Compound: 1,4-Dichlorobenzene

Date: 10 Oct 2025

Test Type: 5-Day Toxicity

CAS Number: 106-46-7

Time: 9:53:57 AM

Route: Whole-Body Inhalation

DTXSID: DTXSID1020431

Species/Strain: Rat/Harlan Sprague Dawley

Female SD 4

		Treatment Group (ppm)						
		0	1	10	50	150	400	800
Blood								
Blood Concentration (ng/mL)		0.398 ± 0.0127[3]**	152 ± 11.0[3]*	1400 ± 70.2[3]**	8140 ± 690[3]**	17700 ± 2370[3]**	99100 ± 5000[3]**	178000 ± 52500[2]**
Normalized Blood Concentration ((ng/mL)/(mg/kg))		NA	92.8 ± 6.70[3]	85.6 ± 4.29[3]	99.8 ± 8.45[3]	72.1 ± 9.66[3]	152 ± 7.65[3]	136 ± 40.2[2]
Normalized Blood Concentration ((ng/mL)/ppm)		NA	152 ± 11.0[3]	140 ± 7.02[3]	163 ± 13.8[3]	118 ± 15.8[3]	248 ± 12.5[3]	222 ± 65.6[2]
Liver								
Liver Concentration (ng/g)		0.873 ± 0.0422[3]**	208 ± 11.1[3]*	1680 ± 185[3]**	8270 ± 771[3]**	37900 ± 5060[3]**	151000 ± 12700[3]**	207000 ± 89000[2]**
Normalized Liver Concentration ((ng/g)/(mg/kg))		NA	127 ± 6.80[3]	103 ± 11.3[3]	101 ± 9.45[3]	155 ± 20.7[3]	231 ± 19.5[3]	159 ± 68.1[2]
Normalized Liver Concentration ((ng/g)/ppm)		NA	208 ± 11.1[3]	168 ± 18.5[3]	165 ± 15.4[3]	253 ± 33.8[3]	378 ± 31.9[3]	259 ± 111[2]
Lung								
Lung Concentration (ng/g)		0.408 ± 0.0132[3]**	120 ± 36.5[3]*	595 ± 158[3]**	3830 ± 1390[3]**	7410 ± 305[3]**	37800 ± 2580[3]**	242000 ± 134000[2]**
Normalized Lung Concentration ((ng/g)/(mg/kg))		NA	73.4 ± 22.3[3]	36.4 ± 9.65[3]	47.0 ± 17.1[3]	30.2 ± 1.24[3]	57.8 ± 3.95[3]	185 ± 103[2]
Normalized Lung Concentration ((ng/g)/ppm)		NA	120 ± 36.5[3]	59.5 ± 15.8[3]	76.7 ± 27.9[3]	49.4 ± 2.03[3]	94.4 ± 6.46[3]	303 ± 168[2]

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Female SD 5

	Treatment Group (ppm)						
	0	1	10	50	150	400	800
Blood							
Blood Concentration (ng/mL)	0.477 ± 0.0264[3]**	4.69 ± 0.736[3]*	36.3 ± 4.94[3]**	250 ± 27.6[3]**	1180 ± 165[3]**	2610 ± 636[3]**	4430 ± 537[3]**
Normalized Blood Concentration ((ng/mL)/(mg/kg))	NA	2.87 ± 0.450[3]	2.22 ± 0.302[3]	3.07 ± 0.338[3]	4.82 ± 0.673[3]	4.00 ± 0.973[3]	3.39 ± 0.411[3]
Normalized Blood Concentration ((ng/mL)/ppm)	NA	4.69 ± 0.736[3]	3.63 ± 0.494[3]	5.01 ± 0.551[3]	7.88 ± 1.10[3]	6.53 ± 1.59[3]	5.54 ± 0.671[3]
Liver							
Liver Concentration (ng/g)	0.760 ± 0.0563[3]**	7.13 ± 1.29[3]*	69.2 ± 24.2[3]**	158 ± 13.5[3]**	1300 ± 225[3]**	2480 ± 413[3]**	3810 ± 665[3]**
Normalized Liver Concentration ((ng/g)/(mg/kg))	NA	4.35 ± 0.787[3]	4.23 ± 1.48[3]	1.94 ± 0.166[3]	5.31 ± 0.919[3]	3.80 ± 0.632[3]	2.92 ± 0.509[3]
Normalized Liver Concentration ((ng/g)/ppm)	NA	7.13 ± 1.29[3]	6.92 ± 2.42[3]	3.17 ± 0.271[3]	8.68 ± 1.50[3]	6.21 ± 1.03[3]	4.77 ± 0.831[3]
Lung							
Lung Concentration (ng/g)	0.482 ± 0.0559[3]**	4.31 ± 1.03[3]*	22.3 ± 3.66[3]**	352 ± 51.9[3]**	446 ± 42.1[3]**	1660 ± 810[3]**	1970 ± 381[3]**
Normalized Lung Concentration ((ng/g)/(mg/kg))	NA	2.63 ± 0.631[3]	1.37 ± 0.224[3]	4.32 ± 0.636[3]	1.82 ± 0.172[3]	2.53 ± 1.24[3]	1.51 ± 0.292[3]
Normalized Lung Concentration ((ng/g)/ppm)	NA	4.31 ± 1.03[3]	2.23 ± 0.366[3]	7.05 ± 1.04[3]	2.97 ± 0.281[3]	4.14 ± 2.03[3]	2.46 ± 0.477[3]

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LEGEND

Theoretical doses estimated for 1, 10, 50, 150, 400 and 800 ppm exposure concentration are 1.64, 16.36, 81.58, 245.18, 653.76 and 1305.97 mg/kg respectively.

Data are displayed as mean \pm SEM (N) unless otherwise noted.

SD = Study Day

Normalized values were calculated by dividing the absolute measurement by either inhaled dose (mg/kg/day) or nominal exposure concentration (ppm). No statistical analysis was performed on normalized endpoints.

Statistical analysis was performed by Jonckheere (trend) and Shirley or Dunn (pairwise) tests.

Statistical significance for the control group indicates a significant trend test.

Statistical significance for a treatment group indicates a significant pairwise test compared to the vehicle control group.

* Statistically significant at $p \leq 0.05$

** Statistically significant at $p \leq 0.01$

One animal in the 800 ppm dose group was removed on SD 4 due to early death.

NA - Not Available.

** END OF REPORT **