

ADME NTP Study S0160 p,p'-Dichlorodiphenyl sulfone

The contract laboratory abbreviation for the test article is DDS.
Animals used were adult male Fischer 344 (F-344) rats.

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p,p'-Dichlorodiphenyl sulfone Studies Performed:

1. 10 mg/kg single intravenous administration with cumulative excretion and tissue distribution at 72 hours post dosing.
2. 10 mg/kg single oral gavage administration with cumulative excretion and tissue distribution at 72 hours post dosing.
3. 100 mg/kg single oral gavage administration with cumulative excretion and tissue distribution at 72 hours post dosing.
4. 1000 mg/kg single oral gavage administration with cumulative excretion and tissue distribution at 72 hours post dosing.
5. 10 mg/kg single intravenous administration with cumulative excretion and tissues analyzed at 0.5, 4, 8, 24, 72, 168 hours and at 21 days post dosing.
6. 1, 10, or 100 mg/kg/day repeat oral gavage administration for 7 days with cumulative excretion, tissue distribution, and disposition at 72 hours after administration of the last dose.
7. 10 mg/kg/day repeat oral gavage administration for 2 weeks with cumulative excretion and tissue distribution at 72 hours after administration of the last dose.
8. 10 mg/kg/day repeat oral gavage administration for 3 weeks with cumulative excretion and tissue distribution at 72 hours after administration of the last dose.
9. 10 mg/kg/day repeat oral gavage administration for 5 weeks with cumulative excretion and tissue distribution at 72 hours after administration of the last dose.

The 7-day repeat dose studies included a vehicle control (not shown). Animals were sacrificed on Day 9. The rats in the 2-, 3-, and 5-week repeat administration studies were dosed 5 days a week with animal sacrifice 72 hours after last dose. Metabolism studies are not shown.

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Table 1

Disposition of Radioactivity 72 h After an iv Dose of
[¹⁴C]DDS (10 mg/kg) to Male F-344 RatsCumulative Excretion of Radioactivity^a

End of Collection Period	Percent of Dose Recovered in:		Total
	Urine	Feces	
6 h	12 ± 0.1		1.2 ± 0.1
24 h	20 ± 0.1	2.4 ± 0.5	4.4 ± 0.4
48 h	26 ± 0.1	6.0 ± 1.0	8.6 ± 1.0
72 h	35 ± 0.1	9.6 ± 0.7	13.1 ± 0.7

Distribution in Tissues^a

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
Adipose	63200 ± 3250	90.0 ± 19.2	40.9 ± 2.5
Blood	729 ± 173	unity	0.352 ± 0.090
Kidney	2410 ± 424	3.44 ± 0.93	0.161 ± 0.026
Liver	3720 ± 307	5.34 ± 1.40	1.69 ± 0.09
Muscle	2680 ± 485	3.83 ± 1.05	11.9 ± 2.32
Small Intestine ^b	—	—	2.05 ± 0.54
Cecum ^b	—	—	1.35 ± 0.17
Large Intestine ^b	—	—	1.09 ± 0.42
Skin	10200 ± 524	14.6 ± 3.76	16.1 ± 0.6
Total in tissues			75.6 ± 5.2

^a N=4^b Includes contents

Table 2

Disposition of Radioactivity 72 h After an Oral Dose of
[¹⁴C]DDS (10 mg/kg) to Male F-344 RatsCumulative Excretion of Radioactivity^a

End of Collection Period (h)	Percent of Dose Recovered in:				Total
	Urine	Breath	CO ₂	Feces	
6	0.4 ± 0.2				0.4 ± 0.2
8		0.0 ± 0.0	0.0 ± 0.0		0.4 ± 0.2
24	2.6 ± 0.2	0.0 ± 0.0	0.0 ± 0.0	1.9 ± 1.1	4.5 ± 1.2
32		0.0 ± 0.0	0.0 ± 0.0		4.5 ± 1.2
48	4.1 ± 0.2	0.0 ± 0.0	0.0 ± 0.0	8.4 ± 2.4	12.5 ± 2.3
56		0.0 ± 0.0	0.0 ± 0.0		12.5 ± 2.3
72	5.2 ± 0.2	0.0 ± 0.0	0.1 ± 0.0	14.7 ± 2.6	20.0 ± 2.5

Distribution in Tissues^a

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
Adipose	73800 ± 6620	117 ± 10	48.9 ± 3.1
Blood	631 ± 86	unity	0.310 ± 0.036
Kidney	2390 ± 160	3.84 ± 0.59	0.155 ± 0.013
Liver	4250 ± 549	6.74 ± 0.18	1.79 ± 0.18
Muscle	2582 ± 861	4.05 ± 0.92	11.7 ± 3.7
Small Intestine ^b	—	—	2.54 ± 0.33
Cecum ^b	—	—	1.57 ± 0.40
Large Intestine ^b	—	—	0.994 ± 0.08
Skin	11000 ± 681	17.6 ± 1.9	17.7 ± 0.9
Total in tissues			85.5 ± 7.0

^a N=4^b Includes contents

Table 3

Disposition of Radioactivity 72 h After an Oral Dose of
[¹⁴C]DDS (100 mg/kg) to Male F-344 RatsCumulative Excretion of Radioactivity^a

End of Collection Period (h)	Percent of Dose Recovered in:		Total
	Urine	Feces	
6	0.3 ± 0.1		0.3 ± 0.1
24	2.2 ± 0.3	1.4 ± 0.7	3.6 ± 0.5
48	4.0 ± 1.1	8.1 ± 0.8	12.1 ± 1.7
72	8.1 ± 3.0	19.3 ± 0.9	27.4 ± 2.8

Distribution in Tissues^a

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
Adipose	61500 ± 51500	83.9 ± 22.9	42.5 ± 2.2
Blood	7880 ± 2930	unity	0.405 ± 0.145
Kidney	21100 ± 3280	2.85 ± 0.81	0.140 ± 0.017
Liver	37700 ± 6580	5.10 ± 1.48	2.00 ± 0.25
Muscle	12500 ± 2480	1.65 ± 0.32	5.92 ± 1.18
Small Intestine ^b	—	—	5.29 ± 1.07
Cecum ^b	—	—	3.86 ± 1.53
Large Intestine ^b	—	—	2.01 ± 0.56
Skin	57500 ± 11800	7.77 ± 2.13	9.74 ± 2.48
		Total in tissues	71.9 ± 3.2

^a N=4^b Includes contents

Table 4

Disposition of Radioactivity 72 h After an Oral Dose of
[¹⁴C]DDS (1000 mg/kg) to Male F-344 RatsCumulative Excretion of Radioactivity^a

End of Collection Period (h)	Percent of Dose Recovered in		Total
	Urine	Feces	
6	0.1 ± 0.1		0.1 ± 0.1
24	0.7 ± 0.1	2.6 ± 1.4	3.3 ± 1.4
48	3.6 ± 3.9	10.2 ± 1.5	13.8 ± 3.1
72	10.2 ± 5.5	18.7 ± 3.8	28.9 ± 4.1

Distribution in Tissues^a

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
Adipose	6190000 ± 1180000	101 ± 15	37.0 ± 6.9
Blood	61900 ± 11400	unity	0.275 ± 0.044
Kidney	218000 ± 28000	3.56 ± 0.47	0.160 ± 0.019
Liver	257000 ± 25600	4.20 ± 1.38	1.14 ± 0.07
Muscle	135000 ± 22200	2.28 ± 0.74	5.57 ± 0.95
Small Intestine ^b	—	—	6.91 ± 0.44
Cecum ^b	—	—	10.8 ± 3.5
Large Intestine ^b	—	—	2.25 ± 1.54
Skin	479000 ± 119000	7.81 ± 2.11	6.93 ± 1.57
Total in tissues			71.0 ± 5.5

^a N=4^b Includes contents

Table 5
Distribution of Radioactivity After Intravenous Administration of
[¹⁴C]DDS (10 mg/kg) to Male F-344 Rats

Tissue	N	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
0.5 h^a				
Adipose	2	23400 ± 1490	5.34 ± 0.16	16.2 ± 1.1
Adrenal gland	2	23100 ± 1670	5.30 ± 0.56	0.0381 ± 0.0024
Blood	2	4370 ± 145	unity	2.25 ± 0.09
Kidney	2	7910 ± 607	1.81 ± 0.20	0.609 ± 0.100
Liver	2	14900 ± 586	3.41 ± 0.25	6.12 ± 0.20
Muscle	2	6040 ± 569	1.38 ± 0.08	28.7 ± 2.9
Prostate	2	8950 ± 3700	2.06 ± 0.92	0.166 ± 0.008
Skin	2	15500 ± 1450	3.56 ± 0.45	26.1 ± 2.3
Total in tissues				80.1 ± 1.6
4 h				
Adipose	3	59600 ± 8780	43.8 ± 7.2	41.0 ± 6.1
Adrenal gland	3	14700 ± 10600	10.7 ± 7.4	0.0276 ± 0.0218
Blood	3	1370 ± 71	unity	0.697 ± 0.038
Kidney	3	3830 ± 351	2.80 ± 0.12	0.256 ± 0.022
Liver	3	6010 ± 200	4.42 ± 0.32	2.09 ± 0.34
Muscle	3	4010 ± 1560	2.94 ± 1.09	18.9 ± 7.3
Prostate	3	14600 ± 4570	10.6 ± 2.9	0.176 ± 0.020
Skin	3	21200 ± 3670	15.5 ± 2.0	35.4 ± 6.2
Total in tissues				98.5 ± 6.8
8h				
Adipose	3	63900 ± 6100	59.6 ± 4.0	44.0 ± 4.4
Adrenal gland	3	15600 ± 5530	14.4 ± 4.3	0.0228 ± 0.0042
Blood	3	1070 ± 78	unity	0.548 ± 0.035
Kidney	3	3430 ± 100	3.21 ± 0.15	0.241 ± 0.020
Liver	3	4760 ± 671	4.44 ± 0.55	1.74 ± 0.16
Muscle	3	3990 ± 398	3.73 ± 0.40	18.8 ± 1.6
Prostate	3	19300 ± 4800	18.3 ± 5.7	0.134 ± 0.025
Skin	3	15600 ± 1020	14.7 ± 1.9	26.2 ± 2.1
Total in tissues				91.8 ± 4.1
24 h				
Adipose	3	79500 ± 4860	93.0 ± 14.5	52.2 ± 1.2
Adrenal gland	3	32500 ± 4770	38.1 ± 8.3	0.0837 ± 0.0105
Blood	3	864 ± 83	unity	0.422 ± 0.053
Brain	3	1220 ± 113	1.43 ± 0.27	0.0734 ± 0.0041
Kidney	3	3610 ± 433	4.23 ± 0.93	0.237 ± 0.034
Liver	3	4600 ± 243	5.38 ± 0.79	1.78 ± 0.22
Lung	3	4630 ± 933	5.38 ± 1.04	0.284 ± 0.102
Muscle	3	3910 ± 493	4.54 ± 0.53	17.6 ± 2.0
Prostate	3	16200 ± 2970	19.1 ± 5.4	0.123 ± 0.065
Seminal vesicle	3	2520 ± 1410	3.02 ± 1.82	0.060 ± 0.040
Skin	3	10700 ± 1930	12.3 ± 1.4	17.1 ± 3.7
Spleen	3	1560 ± 361	1.80 ± 0.37	0.0339 ± 0.0096
Testis	3	1460 ± 254	1.71 ± 0.42	0.153 ± 0.030
Thymus	3	6670 ± 1460	7.78 ± 1.82	0.101 ± 0.043
Total in tissues				90.2 ± 3.6
72 h				
Adipose	4	63200 ± 3250	90.0 ± 19.2	40.9 ± 2.5
Blood	4	729 ± 173	unity	0.352 ± 0.090
Kidney	4	2410 ± 424	3.44 ± 0.93	0.161 ± 0.026
Liver	4	3720 ± 307	5.34 ± 1.40	1.69 ± 0.09
Muscle	4	2680 ± 485	3.83 ± 1.05	11.9 ± 2.32
Skin	4	10200 ± 524	14.6 ± 3.76	16.1 ± 0.6
Total in tissues				71.1 ± 4.5
168 h				
Adipose	4	51700 ± 2470	136 ± 16.6	36.9 ± 1.8
Adrenal gland	4	10200 ± 5230	26.0 ± 11.4	0.0193 ± 0.0136
Blood	4	383 ± 47	unity	0.203 ± 0.026
Kidney	4	1870 ± 218	5.01 ± 1.25	0.132 ± 0.007
Liver	4	3010 ± 360	7.91 ± 1.02	1.33 ± 0.21
Muscle	4	1870 ± 243	4.90 ± 0.58	9.15 ± 1.24
Prostate	4	14000 ± 819	36.8 ± 4.4	0.135 ± 0.026
Skin	4	6670 ± 2020	17.6 ± 6.1	11.5 ± 3.4
Total in tissues				59.4 ± 5.1
21 Day				
Adipose	4	19600 ± 2094	85.3 ± 5.7	16.0 ± 2.03
Adrenal gland	4	3640 ± 994	15.5 ± 2.1	0.00655 ± 0.00179
Blood	4	232 ± 34	unity	0.140 ± 0.022
Kidney	4	795 ± 131	3.45 ± 0.44	0.0659 ± 0.0062
Liver	4	1150 ± 217	4.96 ± 0.26	4.504 ± 0.115
Muscle	4	725 ± 180	3.11 ± 0.50	4.06 ± 1.06
Prostate	4	4600 ± 1043	19.87 ± 4.09	0.235 ± 0.0094
Skin	4	2810 ± 530	12.16 ± 1.85	5.55 ± 0.96
Total in tissues				26.4 ± 3.9

^a Three rats were dosed. Upon analysis of radioactivity in tissues, it became apparent that the dose in one case was not properly administered iv so data from that rat was excluded.

Table 6

**Cumulative Excretion of Radioactivity After Intravenous Administration of
[¹⁴C]DDS (10 mg/kg) to Male F-344 Rats**

End of Collection Period	Percent of Dose Recovered in:		
	Urine	Feces	Total
4 h			
4 h	1.7 ± 0.0	0.0 ± 0.0	1.7 ± 0.0
8 h			
8 h	1.8 ± 0.0	0.1 ± 0.0	1.8 ± 0.0
24 h			
24 h	2.1 ± 0.1	2.3 ± 0.9	4.4 ± 0.8
72 h			
6 h	1.2 ± 0.1		1.2 ± 0.1
24 h	2.0 ± 0.1	2.4 ± 0.5	4.4 ± 0.4
48 h	2.6 ± 0.1	6.0 ± 1.0	8.6 ± 1.0
72 h	3.5 ± 0.1	9.6 ± 0.7	13.1 ± 0.7
168 h			
24 h	2.2 ± 0.1	2.0 ± 0.2	4.2 ± 0.2
48 h	3.0 ± 0.2	5.5 ± 0.3	8.5 ± 0.4
72 h	3.7 ± 0.3	9.0 ± 0.3	12.7 ± 0.6
96 h	4.3 ± 0.4	12.9 ± 0.5	17.2 ± 0.7
120 h	4.9 ± 0.4	16.6 ± 0.8	21.5 ± 1.0
144 h	5.4 ± 0.6	19.1 ± 0.8	24.5 ± 0.9
168 h	6.5 ± 1.3	21.5 ± 1.2	28.0 ± 1.2
21 Day (cumulative excretion over the third week only)			
Day 15	0.6 ± 0.2	1.2 ± 0.5	1.8 ± 0.3
Day 16	1.0 ± 0.3	3.9 ± 0.7	4.9 ± 0.7
Day 17	1.2 ± 0.3	5.4 ± 1.1	6.6 ± 1.2
Day 18	1.6 ± 0.3	6.8 ± 1.5	8.4 ± 1.6
Day 19	1.8 ± 0.3	8.1 ± 1.6	9.9 ± 1.6
Day 20	2.0 ± 0.3	9.3 ± 1.8	11.3 ± 1.9
Day 21	2.6 ± 0.4	10.3 ± 1.7	12.9 ± 2.0

Table 7

Cumulative Excretion of Radioactivity During and After a 7-Day Repeat Oral Dosing of [¹⁴C]DDS to Male F-344 Rats^a

End of Collection Period (day)	Percent of Dose Recovered in:		Total
	Urine	Feces	
1 mg/kg			
1	05 ± 0.0	0.3 ± 0.2	0.8 ± 0.2
2	12 ± 0.1	1.3 ± 0.3	2.4 ± 0.3
3	20 ± 0.3	2.6 ± 0.2	4.6 ± 0.4
4	31 ± 0.6	4.0 ± 0.5	7.0 ± 0.6
5	42 ± 0.9	6.3 ± 0.8	10.5 ± 1.0
6	54 ± 1.3	9.1 ± 0.8	14.5 ± 1.2
7	67 ± 1.6	11.4 ± 1.9	18.1 ± 2.3
8	77 ± 1.8	15.7 ± 2.8	23.4 ± 2.6
9	107 ± 2.7	19.9 ± 3.1	30.6 ± 2.0
10 mg/kg			
1	0.3 ± 0.0	0.3 ± 0.1	0.6 ± 0.1
2	0.8 ± 0.1	1.3 ± 0.5	2.1 ± 0.5
3	1.6 ± 0.3	2.8 ± 0.4	4.4 ± 0.6
4	2.7 ± 0.6	5.0 ± 1.3	7.7 ± 1.5
5	4.1 ± 0.9	9.2 ± 1.3	13.3 ± 1.4
6	6.0 ± 1.4	15.0 ± 0.9	21.1 ± 1.6
7	7.9 ± 1.8	21.4 ± 0.9	29.2 ± 1.9
8	9.7 ± 2.6	29.1 ± 1.4	38.8 ± 3.6
9	13.8 ± 4.3	35.0 ± 1.2	48.8 ± 5.1
100 mg/kg			
1	0.3 ± 0.0	0.2 ± 0.0	0.4 ± 0.1
2	0.7 ± 0.1	0.6 ± 0.2	1.3 ± 0.2
3	1.9 ± 0.4	1.9 ± 1.0	3.9 ± 1.2
4	4.8 ± 0.7	3.7 ± 2.3	8.5 ± 2.4
5	7.7 ± 1.3	7.4 ± 4.6	15.1 ± 5.1
6	11.4 ± 3.0	10.8 ± 5.4	22.2 ± 5.8
7	14.7 ± 3.1	13.0 ± 5.9	27.7 ± 4.2
8	17.3 ± 4.7	18.9 ± 8.9	36.2 ± 7.6
9	21.8 ± 6.4	32.6 ± 5.4	54.4 ± 6.2

^a N=4

Table 8

Disposition of Radioactivity 72 Hours after the Final Dose Administered in
a 7-Day Repeat Oral Dosing of [¹⁴C]DDS to Male F-344 Rats^a

	1 mg/kg/day	10 mg/kg/day	100 mg/kg/day
Tissues	62.9 ± 6.5	41.1 ± 3.6	30.9 ± 3.3
Urne	10.7 ± 2.7	13.8 ± 4.3	21.8 ± 6.4
Feces	19.9 ± 3.1	35.0 ± 1.2	32.6 ± 5.4
Total	93.5 ± 6.5	89.9 ± 1.2	85.3 ± 3.6

^a N=4

Table 9

**Tissue Distribution of Radioactivity 72 Hours after the Final Dose
Administered in a 7-Day Repeat Oral Dosing of
[¹⁴C]DDS to Male F-344 Rats^a**

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
1 mg/kg			
Adipose	43400 ± 5240	141.0 ± 10.7	41.0 ± 4.9
Blood	307 ± 23	unity	0.2 ± 0.0
Kidney	1350 ± 348	4.4 ± 1.2	0.1 ± 0.0
Liver	2220 ± 271	7.2 ± 0.6	1.2 ± 0.2
Lung	2150 ± 359	7.1 ± 1.6	0.2 ± 0.0
Muscle	1420 ± 190	4.6 ± 0.4	9.2 ± 1.2
Prostate	6400 ± 1548	20.7 ± 3.8	0.1 ± 0.0
Skin	4740 ± 236	15.4 ± 0.7	10.9 ± 0.5
Total			62.9 ± 6.5
10 mg/kg			
Adipose	277000 ± 17700	110.3 ± 25.6	27.5 ± 1.1
Blood	2600 ± 535	unity	0.2 ± 0.0
Kidney	9780 ± 1350	3.9 ± 1.1	0.1 ± 0.0
Liver	18200 ± 1150	7.3 ± 1.8	1.2 ± 0.0
Lung	6940 ± 1430	2.8 ± 1.0	0.1 ± 0.0
Muscle	9090 ± 4300	3.8 ± 2.2	6.1 ± 2.8
Prostate	43600 ± 8660	17.6 ± 6.5	0.1 ± 0.0
Skin	23900 ± 4960	9.6 ± 3.4	5.8 ± 1.2
Total			41.1 ± 3.6
100 mg/kg			
Adipose	3230000 ± 1570000	99.3 ± 11.7	19.7 ± 3.9
Blood	32500 ± 14700	unity	0.2 ± 0.1
Kidney	129000 ± 115000	3.6 ± 1.5	0.2 ± 0.2
Liver	140000 ± 51500	4.5 ± 0.6	1.2 ± 0.4
Lung	64500 ± 36100	1.9 ± 0.3	0.0 ± 0.0
Muscle	62200 ± 10600	2.1 ± 0.6	3.6 ± 0.6
Prostate	391000 ± 71600	13.8 ± 5.4	0.1 ± 0.0
Skin	183000 ± 60400	6.6 ± 3.5	3.8 ± 1.4
Total			30.9 ± 3.3

^a N=4

Table 10

Disposition of Radioactivity Following a Two-Week Repeat Oral Administration of [¹⁴C]DDS (10 mg/kg/day) to Male F-344 Rats^a

Cumulative Excretion of Radioactivity

End of Collection Period (d)	Percent of Dose Recovered in:		Total
	Urine	Feces	
2	0.228 ± 0.021	0.443 ± 0.114	0.671 ± 0.096
3	0.635 ± 0.116	1.48 ± 0.18	2.12 ± 0.16
4	1.20 ± 0.20	3.12 ± 0.18	4.32 ± 0.24
5	1.98 ± 0.32	5.15 ± 0.52	7.12 ± 0.44
6	2.98 ± 0.55	8.33 ± 0.55	11.3 ± 0.7
7	4.98 ± 0.55 ^b	12.0 ± 1.3	17.0 ± 1.6
8	5.62 ± 0.65	14.8 ± 1.4	20.4 ± 1.8
9	6.11 ± 0.59	18.3 ± 2.1	24.4 ± 2.4
10	7.41 ± 0.85	22.2 ± 2.0	29.6 ± 2.4
11	9.14 ± 1.10	25.4 ± 2.3	34.6 ± 3.0
12	11.0 ± 1.2	28.0 ± 2.6	39.0 ± 3.1
13	13.3 ± 1.3	33.2 ± 3.1	46.5 ± 4.0
14	15.1 ± 1.4	38.6 ± 3.9	53.8 ± 5.0
15	18.0 ± 1.4 ^b	44.7 ± 3.7	62.7 ± 4.9

^a N=4^b Value includes cage rinse

Distribution in Tissues

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
Adipose	265000 ± 19200	116 ± 5.75	19.6 ± 1.4
Blood	2280 ± 165	unity	0.125 ± 0.010
Kidney	7130 ± 1220	3.12 ± 0.48	0.0556 ± 0.0074
Liver	20000 ± 2170	8.74 ± 0.39	0.939 ± 0.117
Lung	9220 ± 3050	4.03 ± 1.29	0.0437 ± 0.0077
Muscle	6330 ± 1390	2.49 ± 0.63	3.20 ± 0.67
Prostate	43800 ± 16800	19.2 ± 7.13	0.0602 ± 0.0176
Skin	23600 ± 8170	10.3 ± 3.2	4.23 ± 1.42
Total in Tissues			28.3 ± 3.3

Table 11

Disposition of Radioactivity Following a Three-Week Repeat Oral Administration of [¹⁴C]DDS (10 mg/kg/day) to Male F-344 Rats^a

Cumulative Excretion of Radioactivity

End of Collection Period (d)	Percent of Dose Recovered in:		Total
	Urine	Feces	
16	0.872 ± 0.187	1.70 ± 0.17	2.57 ± 0.31
17	1.852 ± 0.16	3.83 ± 0.35	5.68 ± 0.45
18	2.77 ± 0.31	6.62 ± 0.87	9.39 ± 0.88
19	3.81 ± 0.42	9.85 ± 1.06	13.7 ± 1.1
20	4.90 ± 0.66	14.1 ± 1.6	19.0 ± 1.9
21	6.02 ± 0.59	18.1 ± 2.1	24.1 ± 2.4
22	8.53 ± 1.20 ^b	24.6 ± 1.1	33.1 ± 1.9

^a N=5

^b Value includes cage rinse.

Distribution in Tissues

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
Adipose	312000 ± 20200	91.7 ± 11.0	15.3 ± 1.01
Blood	3430 ± 306	unity	0.125 ± 0.014
Kidney	8890 ± 1710	2.60 ± 0.49	0.0456 ± 0.0088
Liver	21300 ± 4630	6.17 ± 0.93	0.685 ± 0.167
Lung	9990 ± 2560	2.98 ± 1.07	0.0333 ± 0.0054
Muscle	8110 ± 3520	2.45 ± 1.37	2.70 ± 1.09
Prostate	54300 ± 13600	16.1 ± 4.9	0.0576 ± 0.0161
Skin	32900 ± 7960	9.75 ± 2.87	3.90 ± 0.91
Total in Tissues			22.8 ± 2.0

Table 12

Disposition of Radioactivity Following a Five-Week Repeat Oral Administration of [¹⁴C]DDS (10 mg/kg/day) to Male F-344 Rats^a

Cumulative Excretion of Radioactivity

End of Collection Period (d)	Percent of Dose Recovered in:		Total
	Urine	Feces	
23	0.439 ± 0.170	1.10 ± 0.36	1.54 ± 0.27
24	1.10 ± 0.31	2.40 ± 0.44	3.50 ± 0.23
25	1.81 ± 0.50	4.30 ± 0.97	6.11 ± 0.79
26	3.54 ± 0.85 ^b	6.73 ± 1.27	10.3 ± 0.9
27	4.64 ± 1.25	8.91 ± 1.88	13.5 ± 1.5
28	5.60 ± 1.54	11.2 ± 2.3	16.8 ± 1.3
29	6.27 ± 1.68	13.8 ± 2.3	20.0 ± 1.0
30	6.68 ± 1.76	15.3 ± 2.5	21.9 ± 1.2
31	7.15 ± 1.80	17.7 ± 2.5	24.9 ± 1.3
32	7.70 ± 2.00	20.1 ± 2.8	27.8 ± 1.3
33	8.35 ± 2.21	22.6 ± 3.0	30.9 ± 1.4
34	9.04 ± 2.65	25.1 ± 3.3	34.1 ± 1.6
35	9.61 ± 3.03	27.4 ± 3.3	37.0 ± 1.6
36	11.7 ± 3.1 ^b	29.6 ± 3.8	41.2 ± 1.5

^a N=5^b Value includes cage rinse.

Distribution in Tissues

Tissue	ng-eq DDS per g Tissue	Tissue/Blood Ratio	% Dose in Total Tissue
Adipose	231000 ± 33400	60.1 ± 10.9	6.72 ± 0.98
Blood	3880 ± 447	unity	0.0837 ± 0.0084
Kidney	9350 ± 1360	2.43 ± 0.40	0.0276 ± 0.0036
Liver	23500 ± 3540	6.12 ± 1.14	0.483 ± 0.061
Lung	9980 ± 2130	2.59 ± 0.63	0.0211 ± 0.0022
Muscle	5700 ± 2200	1.49 ± 0.64	1.14 ± 0.442
Prostate	61700 ± 17900	16.0 ± 5.3	0.0214 ± 0.0074
Skin	22800 ± 4430	5.91 ± 1.24	1.61 ± 0.31
Total in Tissues			10.1 ± 1.5