## ADME NTP Study S0533 Formamide

The contract laboratory abbreviation for the test article is FMD.

Species: young adult male F344 rats and B6C3F1 mice.

Vehicles: intravenous, sterile 0.9% saline; inhalation, conditioned room air.

#### CASRN 75-12-7

Radiolabeled with carbon-14; [14C]Formamide

#### Formamide Studies Performed:

- Single intravenous 10 mg [<sup>14</sup>C]FMD/kg dose in rats with sacrifice 24 hours postdose. (Study A; Tables 1, 2)
- Nose-only inhalation exposure of 20 ppm [<sup>14</sup>C]FMD for 6 hours in rats with sacrifice immediately after exposure and at 66 hour following termination of exposure. (Study B; Tables 3,4)
- Single intravenous 10 mg [<sup>14</sup>C]FMD/kg dose in mice with sacrifice 72 hours postdose. (Study C; Table 5,6)
- Single intravenous 10 mg [<sup>14</sup>C]FMD/kg dose in rats and mice with sacrifice 72 hours postdose. (Study E, Clearance of radioactivity from blood; Tables 7,8,9,10)
- Single intravenous 10 mg [<sup>14</sup>C]FMD/kg dose in mice 4 hours following a pretreatment with 100 mg/kg 1-aminobenzotriazole (ABT) that was administered by intraperitoneal injection. Mice were sacrificed 24 hours postdose. (Study F; Table 11)
- Single intravenous 10 mg [14C]FMD/kg dose in mice following inhibition of Cytochrome P450 isozyme 2E1, all P450, or no inhibition with sacrifice 72 hours postdose. (Study G; Table 12,13,14)
- Single intravenous 10 mg [14C]FMD/kg dose in mice following inhibition of Cytochrome P450 enzyme 2E1 with sacrifice 24 hours postdose. (Study H; Table 13)

The bile excretion study (Study D) had no tables. In Study E, rats were jugular vein cannulated for serial blood samples and four mice were sampled per time point with the blood from two mice pooled (yielding only two samples per timepoint). The general Cytochrome P450 inhibition (with ABT) and specific P450 isozyme 2E1 inhibition with trans-1,2-dichloroethylene (DCE) of Study G was achieved with a single intraperitoneal administration of ABT (100 mg/kg) or DCE (472 mg/kg) 4 hours or 2 hours prior to formamide administration, respectively. To achieve inhibition throughout Study H, 575

mg/kg DCE was administered every 4 hours with the first administration 4 hours prior to the 10 mg [14C]FMD/kg intravenous dose.

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<a href="Management">Management</a> or use our <a href="contact form">contact form</a> and identify the documents/pages for which access is required. We will assist you in accessing the content of the files. NIEHS has helpful information on accessibility.

Table 1 Execution of Total <sup>14</sup>C over 24 h by Male Rats Administered a Single iv Dose of [<sup>14</sup>C]FMD (All Values Expressed as % of Administered Dose)<sup>a</sup>

End of Collection (h)	Volatile Breath	CO <sub>2</sub> Breath	Urine	Cage Rinse	Feces	Carcass & Tissues	Total Recovered Dose
3 6 12 24	$0^{b} \\ 0.1 \pm 0.0^{b} \\ 0.1 \pm 0.0 \\ 0.19 \pm 0.2$	3.9 ± 0.4 5.3 ± 0.6 9.0 ± 0.7 10.7 ± 0.9	c 15.5 ± 1.7 9.2 ± 1.6 14.6 ± 2.1	c c c 1.4 <u>+</u> 0.3	c c 0.4 <u>+</u> 0.2 0.7 <u>+</u> 0.2	c c c 19.1 <u>+</u> 2.9	3.9 ± 0.4 20.9 ± 2.2 18.7 ± 1.8 46.8 ± 3.9
Overall Mean Recovery	0.4 <u>+</u> 0.3	26.9 <u>+</u> 1.7	38.9 ± 1.5	1.4 ± 0.3	1.1 ± 0.3	19.1 <u>+</u> 2.9	90.2 ± 0.7

Mean ± S.D. (N=5)
Value less than 0.05.

<sup>&</sup>lt;sup>c</sup> No samples collected.

Table 2

Concentration and Tissue to Blood Ratios of Total <sup>14</sup>C in Excised Tissues of Male Rats 24 h

Post Administration of a Single iv Dose of [<sup>14</sup>C]FMD

Concentration								
Tissue	(μg eq/g)			Tissue to Blood Ratio				
Adipose	0.32	±	0.04	0.12	±	0.02		
Bladder	3.850	<u>+</u>	1.08	1.39	±	0.37		
Blood	2.77	<u>+</u>	0.20		<b>Jnity</b>			
Brain	2.06	<u>+</u>	0.25	0.74	±	0.05		
Carcass	0.63	<u>+</u>	0.07	0.23	±	0.01		
Cecal Contents	3.25	<u>+</u>	0.57	1.17	±	0.15		
Cecum	0.11	<u>+</u>	0.02	0.04	<u>+</u>	0.01		
Heart	2.47	<u>+</u>	0.27	0.891	±	0.04		
Small Intestine	0.119	<u>+</u>	0.03	0.04	±	0.01		
Kidney	2.74	<u>+</u>	0.28	0.99	±	0.05		
Large Intestine	0.24	<u>+</u>	0.08	80.0	±	0.03		
Large Intestine Contents	3.52	<u>+</u>	0.59	1.27	±	0.15		
Liver	2.43	<u>+</u>	0.28	0.88	<u>+</u>	0.07		
Lung	2.48	<u>+</u>	0.27	0.90	<u>+</u>	0.04		
Muscle	2.02	<u>±</u>	0.32	0.73	<u>+</u>	0.09		
Small Intestine Contents	2.70	<u>+</u>	0.58	0.97	<u>+</u>	0.16		
Spleen	2.68	<u>+</u>	0.28	0.97	<u>+</u>	0.04		
Skin	1.84	±	0.22	0.66	<u>+</u>	0.06		
Testes	2.23	<u>+</u>	0.42	0.80	+	0.11		

a<sub>N=5</sub>

Table 3 Radioactivity Excreted Over Time from Male Rats Receiving a Single Inhaled [14C]FMD Dose (All Values Expressed as % of Administered Dose)<sup>a</sup>

End of Collection (h)	Volatile Breath	CO <sub>2</sub> Breath	Urine	Cage Rinse	Feces	Carcass & Tissues	Total Recovered Dose
6 18 42 66	$\begin{array}{cccc} 0.1 & \pm & 0.0^{b} \\ 0.2 & \pm & 0.1 \\ 0.3 & \pm & 0.3 \\ 0.1 & \pm & 0.1 \end{array}$	7.6 ± 0.6 9.8 ± 0.9 6.4 ± 0.3 3.3 ± 0.2	2.5 ± 0.5 5.1 ± 1.9 8.8 ± 1.9 7.8 ± 1.1	d d d 6.1 <u>+</u> 1.1	d 0.5 ± 0.2 0.9 ± 0.2 0.5 ± 0.1	d d d 39.4 + 4.6	10.1 ± 1.0 15.6 ± 2.7 16.4 ± 2.0 57.3 ± 5.0
Overall Mean Recovery	0.7 ± 0.5	27.1 <u>+</u> 1.3	24.6 ± 3.6	6.1 <u>+</u> 1.1	2.1 <u>+</u> 0.3	39.4 ± 4.6	100 <sup>¢</sup>

 $<sup>^{</sup>a}$  All values expressed as Mean  $\pm$  S.D. (N=5)  $^{b}$  Value less than 0.05.

<sup>&</sup>lt;sup>c</sup> Administered dose is calculated as the absorbed dose (total radioactivity in the carcass and tissues and all excreta).
<sup>d</sup> No sample collected.

Table 4

Concentration of Radiolabel and Tissue to Blood Ratios of Total <sup>14</sup>C in Excised Tissues from Male Rats Sacrificed Immediately (top) and 66 h (bottom) Post Administration of a Single Inhaled Dose of [<sup>14</sup>C]FMD<sup>a</sup>

Concentration								
Tissue	(μ	(μg eq/g)			Tissue to Blood Ratio			
Adipose	0.15	<u>+</u>	0.04	0.11	±	0.03		
Bladder	1.95	<u>+</u>	0.40	1.46	<u>+</u>	0.32		
Blood	1.35	<u>+</u>	0.17		Unity			
Brain	1.04	<u>+</u>	0.17	0.77	<u>+</u> ^	0.06		
Carcass	1.55	<u>+</u>	0.25	1.15	<u>+</u>	0.11		
Cecum	0.09	<u>+</u>	0.01	0.06	<u>+</u>	0.00		
Heart	1.18	<u>±</u>	0.15	0.88	<u>+</u>	0.03		
Small Intestine	0.12	<u>+</u>	0.02	0.09	±	0.01		
Kidney	1.55	<u>+</u>	0.24	1.15	<u>+</u>	0.06		
Large Intestine	0.03	<u>+</u>	0.00	0.02	<u>+</u>	0.00		
Liver	1.28	<u>+</u>	0.18	0.95	<u>+</u>	0.07		
Lung	1.32	<u>+</u>	0.19	0.98	<u>+</u>	0.11		
Muscle	1.11	<u>+</u>	0.30	0.82	<u>+</u>	0.16		
Plasma	1.52	±	0.28	1.13	±	0.13		
Spleen	1.27	±	0.16	0.95	±	0.02		
Stomach	0.05	<u>+</u>	0.01	0.04	<u>+</u>	0.01		
Testes	1.03	<u>+</u>	0.12	0.77	<u>+</u>	0.04		

Concentration Tissue (μg eq/g) Tissue to Blood Ratio							
\ dinoco	0.06		0.02	0.00		0.01	
Adipose		<u>+</u>		0.09	<u>+</u>	0.01	
Bladder	0.54	<u>+</u>	0.08	0.86	<u>+</u>	0.13	
Blood	0.64	<u>+</u>	0.18		Unity		
Brain	0.29	<u>+</u>	0.08	0.46	<u>+</u>	0.08	
Carcass	0.74	<u>+</u>	0.17	1.17	<u>+</u>	0.10	
Cecum	0.03	<u>+</u>	0.01	0.05	<u>+</u>	0.01	
Heart	0.46	<u>+</u>	0.12	0.72	<u>+</u>	0.07	
Small Intestine	0.04	<u>+</u>	0.01	0.06	<u>+</u>	0.01	
Kidney	0.51	<u>+</u>	0.13	0.81	<u>+</u>	0.06	
.arge Intestine	0.02	<u>+</u>	0.00	0.04	<u>+</u>	0.01	
iveriver	0.49	<u>+</u>	0.13	0.77	<u>+</u>	0.08	
.ung	0.51	<u>+</u>	0.11	0.80	<u>+</u>	0.08	
Muscle	0.36	<u>+</u>	0.16	0.56	<u>+</u>	0.17	
Plasma	0.38	±	0.11	0.60	±	0.09	
Spleen	0.55	<u>+</u>	0.15	0.86	<u>+</u>	0.03	
Stomach	0.02	<u>+</u>	0.01	0.02	<u>+</u>	0.00	
Testes Testes	0.30	<u>+</u>	0.09	0.48	<u>+</u>	0.10	

<sup>\*</sup> N=5

The ears were collected as representative skin samples. However, these samples appeared to be highly contaminated due to direct deposition of radiolabel from the FMD atmosphere onto the ears. Radioactivity associated with the ear samples was not included in the calculation of absorbed dose.

Table 5 Radioactivity Excreted Over Time from Male Mice Administered a Single iv [14C]FMD Dose (All Values Expressed as % of Administered Dose)

End of Collection (h)	Volatile Breath	CO <sub>2</sub> Breath	Urine	Cage Rinse	Feces	Carcass & Tissues	Total Recovered Dose
3 6 12 24 48 72	$\begin{array}{ccccc} 0.3 & \pm & 0.1 \\ 0.2 & \pm & 0.0 \\ 0.1 & \pm & 0.0 \end{array}$	20.8 ± 3.3 15.0 ± 1.0 12.9 ± 1.8 3.8 ± 0.6 0.6 ± 0.1 <sub>b</sub> 0.2 ± 0.0	c 10.0 ± 11.5 5.6 ± 11.0 11.9 ± 10.4 1.6 ± 0.5 0.7 ± 0.1	c c c c c	c c 0.9 ± 0.1 1.1 ± 0.4 0.4 ± 0.4 0.1 ± 0.1	c c c c c 2.8 <u>+</u> 0.1	21.1 + 3.2 25.2 ± 10.9 19.6 ± 12.0 17.0 ± 11.0 2.73 ± 0.8 4.7 ± 0.3
Overall Mean Recovery	1.4 ± 0.1	53.2 ± 4.1	29.7 <u>+</u> 1.3	0.9 <u>+</u> 0.3	2.5 <u>+</u> 0.3	2.8 <u>+</u> 0.1	89.7 <u>+</u> 5.4

 $_{\rm b}^{\rm a}$  All values expressed as Mean  $\pm$  S.D. (N=4) Value less than 0.05.  $^{\rm c}$  No samples collected.

Table 6 Concentration and Tissue to Blood Ratios of Total <sup>14</sup>C in Excised Tissues of Male Mice 72 h Post Administration of a Single IV Dose of [14C]FMD<sup>a</sup>

	Concent	ration	
Tissue	(μg ed	q/g)	Tissue to Blood Ratio
Adinaga	0.07	0.04	0.00
Adipose	0.07 <u>+</u>	0.01	$0.06 \pm 0.01$
Bladder	0.29 <u>+</u>	0.01	0.23 <u>+</u> 0.02
Blood	1.26 <u>+</u>	0.10	Unity
Brain	0.15 <u>+</u>	0.01	0.12 <u>+</u> 0.00 <sup>b</sup>
Carcass	0.03 ±	0.00 <sup>b</sup>	0.02 ± 0.00 <sup>b</sup>
Cecum	0.01 <u>+</u>	0.00p	0.01 <u>+</u> 0.00 <sup>b</sup>
Heart	0.52 <u>+</u>	0.07	0.42 <u>+</u> 0.05
Small Intestine	0.01 <u>+</u>	0.00 <sup>b</sup>	0.01 <u>+</u> 0.0 <sup>b</sup>
Kidney	0.43 <u>+</u>	0.03	$0.34 \pm 0.01$
Large Intestine	0.01 <u>+</u>	0.00 <sup>b</sup>	0.00 <sup>b</sup> <u>+</u> 0.00 <sup>b</sup>
Liver	0.34 <u>+</u>	0.04	0.27 <u>+</u> 0.02
Lung	0.56 <u>+</u>	0.08	0.44 <u>+</u> 0.06
Muscle	0.23 <u>+</u>	0.02	0.18 <u>+</u> 0.01
Plasma	0.14 +	0.02	0.11 <u>+</u> 0.01
Skin	0.21 +	0.01	0.17 <u>+</u> 0.01
Spleen	0.49 <sub>.</sub> <u>+</u>	0.04	$0.40 \pm 0.06$
Stomach	0.00 <sup>b</sup> <u>+</u>	0.00 <sup>b</sup>	0.00 <sup>b</sup> ± 0.00 <sup>b</sup>
Testes	0.09 <u>+</u>	0.01 <sup>b</sup>	0.08 <u>+</u> 0.00 <sup>b</sup>

a<sub>N=4</sub> b Value less than 0.005.

Table 7

Concentration of <sup>14</sup>C in Plasma after Administration of 10 mg FMD/kg iv to Male F-344 Rats (μg-Equilvalents per gram Plasma)

a. Group A

Sample <sup>a</sup> Time (h)	ER-A1	ER-A2	ER-A3	ER-A4	Mean ±	SD
0	0	0	0	0	0	
0.5	12.2	14.1	12.8	13.4	13.1 ±	8.0
1.5	11.8	12.8	12.1	12.5	12.3 ±	0.4
3	11.1	11.6	11.3	11.2	11.3 ±	0.2
8	8.50	8.87	8.69	8.56	8.65 ±	0.16
24	3.13	3.20	3.11	2.72	3.04 ±	0.22

b. Group B

Sample <sup>a</sup> Time (h)	ER-B1	ER-B2	ER-B3	ER-B4	Mean ± SD
0.25	14.8	14.3	14.2	10.1	13.4 ± 2.2
1	12.8	12.6	11.7	10.1	11.8 ± 1.2
2	11.7	11.7	11.4	9.90	$11.2 \pm 0.9$
5	10.2	10.2	10.3	8.42	$9.80 \pm 0.92$
12	7.55	7.43	7.37	5.95	$7.07 \pm 0.75$
32	2.02	2.29	1.84	1.74	$1.97 \pm 0.24$
48	0.670	0.867	0.679	0.670	$0.722 \pm 0.097$
72	0.204	0.259	0.237	0.208	0.227 ± 0.026

Average <sup>14</sup>C Concentration (µg-eq/g) in Plasma

·	AVG µg-eq/g
Sample Time (h) <sup>a</sup>	Plasma
0	0
0.25	13.4
0.5	13.1
1	11.8
1.5	12.3
2	11.2
3	11.3
5	9.80
8	8.65
12	7.07
24	3.04
32	1.97
48	0.722
72	0.227

<sup>&</sup>lt;sup>a</sup> Times following administration of radiolabeled dose.

Table 8

Concentration of <sup>14</sup>C in Blood after Administration of <sup>10</sup> mg FMD/kg iv to Male F-344 Rats<sup>a</sup> (µg-Equilvalents per gram Blood)

a. Group A

Sample <sup>b</sup> Time (h)	ER-A1	ER-A2	ER-A3	ER-A4	Mean ± SD
0	0	0	0	0	0
0.5	11.0	12.8	11.6	12.1	11.9 ± 0.7
1.5	10.7	11.5	10.8	11.1	11.0 ± 0.4
3	9.96	10.4	10.2	10.1	$10.2 \pm 0.2$
8	7.92	8.11	7.93	7.86	7.96 ± 0.11
24	3.12	3.07	3.03	2.67	2.97 ± 0.20

b. Group B

Sample <sup>a</sup> Time (h)	ER-B1	ER-B2	ER-B3	ER-B4	Mean ± SD
0.25	12.9	13.0	12.8	9.05	11.9 ± 1.9
ί1	11.8	11.1	10.9	9.22	10.7 ± 1.1
2	10.4	10.4	10.2	8.83	$9.94 \pm 0.74$
5	9.04	8.97	9.14	7.76	$8.73 \pm 0.65$
12	6.94	6.64	6.76	5.60	$6.48 \pm 0.60$
32	2.20	2.45	2.17	2.00	$2.21 \pm 0.19$
48	1.03	1.31	1.10	1.03	1.12 ± 0.13
72	0.712	0.766	0.804	0.693	$0.744 \pm 0.051$

Average <sup>14</sup>C Concentration (µg-eq/g) in Blood Summary

Sample Time (h) <sup>a</sup>	AVG μg-eq/g Blood
0	0
0.25	11.9
0.5	11.9
1	10.7
1.5	11.0
2	9.94
3	10.2
5	8.73
8	7.96
12	6.48
24	2.97
32	2.21
48	1.12
72	0.744

<sup>&</sup>lt;sup>a</sup> Using the average hematocrit reading found in 24 & 72 h blood samples, the concentration in blood was calculated by adding 66.8% of the plasma concentration/timepoint plus 33% of the RBC concentration/timepoint. Example: ER-A1 0.5h, Plasma Conc. = 12.2 μg-eq/g, RBC Conc. = 8.70 μg-eq/g, Blood Conc. = (12.2 x 0.668) + (8.70 x 0.333) = 11.0 μg-eq/g Blood.

b Times following administration of radiolabeled dose.

Table 9

Concentration and Plasma to Blood Ratio of Total <sup>14</sup>C in Male Rats and Mice after iv Administration of 10 mg FMD/kg<sup>a</sup>

a. F-344 Rats

Timepoint (h) <sup>D</sup>	Tissue Name	N	ng-eq /g Tissue	Plasma:Blood Ratio
24	Blood	4	2970 ± 203	
	Plasma	4	$3040 \pm 218$	$1.02 \pm 0.02$
32	Blood	4	2205 ± 186	
	Plasma	4	1973 ± 241	$0.89 \pm 0.04$
48	Blood	4	1119 ± 132	
	Plasma	4	$722 \pm 97$	$0.64 \pm 0.02$
72	Blood	4	744 ± 51	
	Plasma	4	227 ± 26	$0.31 \pm 0.02$

b. B6C3F<sub>1</sub> Mice

Timepoint (h)	Tissue Name	N	ng-eq /g Tissue	Plasma:Blood Ratio
24	Blood	2c	687	
	Plasma		231	0.336
48	Blood	2d	968	
	Plasma		159 <sup>e</sup>	0.163
72	Blood	2c	1170	
	Plasma		135	0.115

a Study E data.

b Times following administration of radiolabeled dose.

Each of the two determinations were made on the combined blood from two animals (total number of animals = 4)

One of the two determinations were made on the combined blood from the two animals that received the rat dosing solution. Doses for these animals were 42.5 and 49.2 mg FMD/kg. The other determination was from a single animal that received a dose of 7.30 mg FMD/kg.

Due to problems in dosing, two mice in the 48 h group of Study E received doses of FMD 4-5 times as large as the planned 10 mg FMD/kg dose (Refer to Table 10.1); the ng-eq/g tissue values shown were normalized to a dose of 10 mg/kg.

Table 10 Urinary Excretion of <sup>14</sup>C by Male B6C3F<sub>1</sub> Mice following a Single 10 mg/kg iv Dose of FMD (Study E)<sup>a</sup>

End of Collection	Percent Dose Excreted <sup>b</sup>			Cumulative Percent Dose Excreted <sup>b</sup>		
	17.5	+	4.6	17.5	<u>+</u>	4.5
12 h	3.9	<u>+</u>	3.3	21.4	<u>+</u>	2.6
24 h	6.7	±	2.2	28.1	±	2.1
48 h	2.3	<u>+</u>	1.1	30.4	±	1.8
72 h	0.9	<u>+</u>	0.3	31.3	±	1.8

 $<sup>^{\</sup>rm a}$  N=4  $^{\rm b}$  All values expressed as Mean  $\pm$  S.D.

Table 11

Elimination of <sup>14</sup>CO<sub>2</sub> by Male B6C3F<sub>1</sub> Mice Following a Single 10 mg/kg iv Dose of FMD (Study F)<sup>a</sup> Administered 4h After a Single 100 mg/kg ABT ip Dose

End of Collection	Percent Dos	Cumulative Percent Dose Excreted <sup>b</sup>			
	1.4 <u>+</u>	0.1	1.4	±	0.1
6 h	0.5 <u>+</u>	0.1	1.9	<u>+</u>	0.2
12 h	1.2 <u>+</u>	0.2	3.1	<u>+</u>	0.3
24 h	2.2 <u>+</u>	0.9	5.3	±	0.9

a N=4

<sup>&</sup>lt;sup>b</sup> All values expressed as Mean ± S.D.

Table 12
Elimination of <sup>14</sup>C in Urine by Male B6C3F<sub>1</sub> Mice Administered a Single 10 mg/kg FMD iv Dose<sup>a</sup>

(a) Control Animals<sup>b</sup>

End of Collection	Percent Do	Cumulative Percent Dose Excreted			
	0.0 <u>+</u>	0.0	0.0	<u>+</u>	0.0
12 h	14.38 <u>+</u>	7.58	14.38	<u>+</u>	7.58
24 h	5.34 <u>+</u>	2.35	19.72	<u>+</u>	9.86
48 h	5.77 <u>+</u>	2.95	25.49	<u>+</u>	7.12
72 h	1.83 <u>+</u>	2.18	27.33	<u>+</u>	5.40

### (b) FMD Administration 5 h after a Single 100 mg/kg ABT ip Dose<sup>c</sup>

Percent Dose Excreted	Cumulative Percent Dose Excreted		
12.08 <u>+</u> 12.08	12.08 <u>+</u> 12.08		
11.95 <u>+</u> 7.02	24.03 <u>+</u> 17.14		
23.47 <u>+</u> 10.97	$47.50 \pm 6.16$		
10.04 <u>+</u> 3.31	57.54 ± 2.86		
4.36 <u>+</u> 1.27	61.90 <u>+</u> 1.59		
	12.08 ± 12.08 11.95 ± 7.02 23.47 ± 10.97 10.04 ± 3.31		

### (c) FMD Administration 3 h after a Single 472 mg/kg DCE ip Dose<sup>c</sup>

End of Collection	Percent Dose	Cumulative Percent Dose Excreted			
	2.42 <u>+</u>	1.83	2.42	<u>+</u>	1.83
12 h	6.46 <u>+</u>	1.65	8.87	<u>±</u>	0.18
24 h	5.55 <u>+</u>	3.29	14.42	<u>+</u>	3.12
48 h	4.87 <u>+</u>	2.11	19.28	<u>±</u>	5.24
72 h	1.40 ±	2.62	20.68	<u>+</u>	7.86

# (d) FMD Administration 3 h after a Single 545 mg/kg DCE ip Dose with 5 Additional DCE Doses Every 4 h<sup>d</sup>

End of Collection	Percent Dos	Cumulative Percent Dose Excreted			
	4.08 <u>+</u>	8.03	4.08	<u>+</u>	8.033
12 h	0.84 <u>+</u>	1.65	4.92	<u>±</u>	9.68
24h	0.84 <u>+</u>	0.95	5.76	<u>+</u>	10.04

<sup>&</sup>lt;sup>a</sup> All Values are expressed as percent of <sup>14</sup>C dose.

<sup>&</sup>lt;sup>b</sup> Values are means ± SD, N=3

<sup>&</sup>lt;sup>c</sup> Values are averages ± range, N=2. Absorption of urine by a food occlusion in the metabolism chamber of one animal from this group was suspected prior to observing significantly low urinary <sup>14</sup>C excretion for that animal. The animal's data is not represented here.

<sup>&</sup>lt;sup>d</sup> Values are means ± SD, N=4

Table 13 Elimination of  $^{14}\mathrm{CO_2}$  by Male B6C3F $_1$  Mice Administered a Single 10 mg/kg FMD iv Dose  $^a$  Studies G and H

## (a) control animals<sup>b</sup>

End of Collection	Percent Dos	Cumulative Percent Dose Excreted			
3 h	19.16 <u>+</u>	2.69	19.16	±	2.69
6 h	5.70 <u>+</u>	6.16	24.88	±	8.86
12 h	11.29 ±	2.35	36.17	<u>+</u>	11.08
24 h	13.15 <u>+</u>	8.43	49.32	<u>+</u>	3.24

## (b) FMD Administration 5h After a Single 100 mg/kg ABT ip Dose<sup>b</sup>

End of Collection	Percent Dose	Cumulative Percent Dose Excreted			
3 h	2.27 <u>+</u>	0.33	2.27	<u>+</u>	0.33
6 h	0.48 <u>+</u>	0.10	2.75	±	0.43
12 h	0.92 <u>+</u>	0.07	3.67	<u>±</u>	0.47
24 h	1.47 <u>+</u>	0.66	5.14	<u>+</u>	1.11

## (c) FMD Administration 3h After a Single 472 mg/kg DCE ip Dose<sup>b</sup>

End of Collection	Percent Dos	Cumulative Percent Dose Excreted			
3 h	3.09 ±	0.56	3.09	±	0.56
6 h	6.93 <u>+</u>	2.33	10.02	<u>+</u>	2.89
12 h	21.55 ±	3.26	31.58	<u>+</u>	1.99
24 h	17.13 <u>+</u>	4.39	48.70	<u>+</u>	2.67

# (d) FMD Administration 3h After a Single 545 mg/kg DCE ip Dose with 5 Additional DCE Doses every

End of Collection	Percent Dose	Excreted		ive Per Excrete	cent Dose ed
3h	1.67 <u>+</u>	0.34	1.67	±	0.34
6 h	0.93 ±	0.07	2.60	<u>+</u>	0.32
12 h	1.57 <u>+</u>	0.22	4.17	±	0.50
24 h	2.15 ±	0.94	6.31	<u>+</u>	1.26

 $<sup>^{\</sup>text{a}}$  All values expressed as Mean  $\pm$  S.D.  $^{\text{b}}$  N=3

<sup>&</sup>lt;sup>c</sup> N=4.

Table 14

Concentration and Tissue to Blood Ratios of Total <sup>14</sup>C in Excised Tissues of Male Mice 72 h Post Administration of a Single IV Dose of [<sup>14</sup>C]FMD

### **Control Mice**

Tissue	Concentr (μg eq		Tissue to Blood Ratio	
Plasma	0.10 <u>+</u>	0.00	0.14 <u>+</u> 0.04	
Blood	0.80 <u>+</u>	0.26	Unity <sup>,</sup>	
Liver	0.29 <u>+</u>	0.06	$0.37 \pm 0.04$	
Muscle	0.21 <u>+</u>	0.02	0.27 <u>+</u> 0.05	

### Mice Pretreated with ABT ca. 5 h Prior to FMD Administration

Tissue	Concentration (µg eq/g)	Tissue to Blood Ratio	
Plasma	0.11 ± 0.07	0.48 <u>+</u> 0.27	
Blood	$0.23 \pm 0.05$	Unity	
Liver	$0.23 \pm 0.05$	1.01 ± 0.05	
Muscle	0.15 <u>+</u> 0.03	0.658 <u>+</u> 0.121	

## Mice Pretreated with a Single Dose of DCE ca. 3 h Prior to FMD Administration

Tissue		entration eq/g)	Tissue to Blood Ratio	
Plasma	0.16 <u>±</u>	0.02	0.15 <u>+</u> 0.03	
Blood	1.13	0.12	Unity	
Liver	0.54	0.06	0.49 <u>+</u> 0.09	
Muscle	0.37	0.00	0.33 <u>+</u> 0.04	

<sup>&</sup>lt;sup>a</sup> All values expressed as Mean ± S.D., N=3.