

**Recovery of Radioactivity 72 Hours Following Dermal Administration  
of 0.7 mg/kg [14C]Dicyclohexylcarbodiimide to Male B6C3F<sub>1</sub> Mice – Study E<sup>a</sup>**

Dose Recovered in Excreta (%)

End of Collection Period (h)	Urine CPDE <sup>b</sup>	Feces CPDE	Volatile Organics <sup>c</sup> Trapped by Ethanol CPDE	Volatile Organics <sup>c</sup> Trapped by Charcoal CPDE	CO <sub>2</sub> <sup>c</sup> CPDE	Total CPDE
6	NC <sup>f</sup>	NC	0.12 ± 0.03	0.007 ± 0.007	0.10 ± 0.04	0.23 ± 0.05
8 <sup>d</sup>	3.9 ± 3.9	NC	0.14 ± 0.04	0.05 ± 0.04	0.12 ± 0.04	4.2 ± 4.0
24 <sup>d</sup>	7.0 ± 6.9	10.2 ± 6.8	0.20 ± 0.04	0.05 ± 0.04	0.14 ± 0.03	17.6 ± 4.5
48 <sup>d</sup>	9.0 ± 8.1	13.0 ± 7.5	0.23 ± 0.04	0.05 ± 0.04	0.15 ± 0.03	22.4 ± 3.9
72 <sup>e</sup>	11.4 ± 8.7	14.0 ± 6.9	0.25 ± 0.04	0.05 ± 0.04	0.17 ± 0.03	26.0 ± 3.2

Distribution in Tissues (72 hours)

Tissue	ng-eq per g tissue Mean	ng-eq per g tissue SD	TBR <sup>g</sup> Mean	TBR SD	% Dose in Total Tissue <sup>h</sup> Mean	% Dose in Total Tissue SD
Adipose	26.7	15.1	7.69	5.84	0.33	0.24
Bladder	21.2	8.7	5.37	2.59	0.004	0.003
Blood	4.29	1.57	Unity	–	0.04	0.01
Brain	5.29	0.42	1.33	0.37	0.013	0.001
Heart	28.3	9.5	6.68	0.93	0.022	0.007
Kidney	34.2	16.5	7.83	1.03	0.07	0.03
Liver	103.0	78.1	22.1	7.9	0.6	0.3
Lung	6.98	1.85	1.68	0.30	0.006	0.002
Muscle	5.14	1.24	1.24	0.16	0.30	0.04
Skin	9.52	1.69	2.37	0.63	0.18	0.04
Spleen	9.67	5.66	2.17	0.52	0.003	0.002
Testes	5.91	0.81	1.46	0.31	0.0068	0.0008
Carcass	NA	–	NA	–	0.5	0.5
Dose Site	27.9	5.2	6.85	1.50	1.96	0.43

Disposition Summary – Overall Percent Dose Recovered (Absorbed + Unabsorbed Dose)

Percent Dose	Mean ± SD
<b>Absorbed Dose</b>	–
Excreta	–
Urine	11.4 ± 8.7
Feces	14.0 ± 6.9
Exhaled CO <sub>2</sub>	0.17 ± 0.03
Volatile Organics	0.25 ± 0.04
Volatile Organics by charcoal	0.05 ± 0.04
Dose Site	2.0 ± 0.4
Residual Carcass <sup>i</sup>	0.5 ± 0.5
Collected Tissues	1.5 ± 0.12
Total % Dose Absorbed	29.9 ± 3.3
<b>Unabsorbed Dose</b>	–
Total % Dose Unabsorbed <sup>j</sup>	58.7 ± 4.2
<b>Overall % Dose Recovered</b>	<b>88.6 ± 5.7</b>

<sup>a</sup>All values expressed as mean ± standard deviation (SD) (N = 4). The target dose was 0.7 mg dicyclohexylcarbodiimide/kg body weight. The actual dose delivered was 0.69 ± 0.03 mg/kg (2.85 ± 0.15  $\mu$ Ci/animal) (0.005 mg/cm<sup>2</sup>). Animals were weighted prior to shaving ca. 24 hours prior to

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(continued)**

dosing. Because dicyclohexylcarbodiimide (DCC) readily sublimates at room temperature, dose sites were covered by nonocclusive appliances to protect the dose site and permit recovery of volatilized [<sup>14</sup>C]DCC. The protective appliance was prepared by covering a wire mesh tissue capsule with a charcoal-impregnated filter. A metal protective shield was also placed over the capsule.

<sup>b</sup>CPDE = Cumulative percent dose excreted.

<sup>c</sup>Volatile organics and CO<sub>2</sub> in exhaled breath.

<sup>d</sup>Urine values include methanol rinse of the urine flask.

<sup>e</sup>Urine value includes cage rinse.

<sup>f</sup>NC = not collected. No collection was scheduled for this time interval.

<sup>g</sup>TBR = Tissue/Blood ratio.

<sup>h</sup>Percent Dose was calculated using the following values for the mass of total tissue, expressed as percent of body weight: adipose, 9.6%; blood, 7.6%; muscle, 45.2%; and skin, 14.4%.

<sup>i</sup>Percent dose recovered in the residual carcass less the percent dose measured as individual tissues: skin, muscle, adipose, and blood.

<sup>j</sup>Total radioactivity in the appliance and skin wash, etc.