

Recovery of Radioactivity 72 Hours Following Dermal Administration of 0.3 mg/kg [¹⁴C]Dicyclohexylcarbodiimide to Male Fischer 344 Rats – Study A^a

Dose Recovered in Excreta (%)

End of Collection Period (h)	Urine CPDE ^b	Feces CPDE	Volatile Organics ^c CPDE	CO ₂ ^c CPDE	Total CPDE
6	NC ^d	NC	0.6 ± 0.2	0.01 ± 0.01	0.6 ± 0.2
8	0.6 ± 0.2	NC	0.6 ± 0.2	0.01 ± 0.01	1.2 ± 0.1
24	2.5 ± 0.7	0.2 ± 0.1	0.9 ± 0.2	0.01 ± 0.01	3.6 ± 0.7
48	4.1 ± 1.1	0.5 ± 0.2	0.9 ± 0.2	0.02 ± 0.01	5.6 ± 1.3
72e	5.8 ± 1.6	0.7 ± 0.2	1.0 ± 0.2	0.02 ± 0.01	7.5 ± 1.8

Distribution in Tissues (72 hours)

Tissue	ng-eq per g tissue Mean	ng-eq per g tissue SD	TBR ^f Mean	TBR SD	% Dose in Total Tissue ^g Mean	% Dose in Total Tissue SD
Adipose	2.94	0.64	3.18	0.28	0.07	0.02
Bladder	5.44	2.04	5.85	1.89	0.0008	0.0004
Blood	0.92	0.16	Unity	–	0.016	0.003
Brain	3.66	0.67	3.98	0.24	0.007	0.001
Heart	14.0	2.7	15.2	1.7	0.014	0.003
Kidney	43.9	9.7	47.4	3.2	0.10	0.02
Liver	11.7	2.7	12.7	1.4	0.14	0.04
Lung	4.42	0.79	4.80	0.25	0.005	0.001
Muscle	2.26	0.61	2.43	0.24	0.36	0.11
Skin	2.24	0.62	2.41	0.39	0.13	0.04
Spleen	3.70	0.74	4.01	0.23	0.002	0.001
Testes	2.49	0.30	2.72	0.15	0.009	0.001

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

Percent Dose	Mean ± SD
Absorbed Dose	–
Excreta	–
Urine	5.8 ± 1.6
Feces	0.7 ± 0.2
Exhaled CO ₂	0.02 ± 0.01
Volatile Organics	1.0 ± 0.2
Dose Site	16.0 ± 3.5
Selected Tissues ^h	0.3 ± 0.1
Residual Carcass	1.7 ± 1.5
Total % Dose Absorbed	25.5 ± 6.1
Unabsorbed Dose	–
Total % Dose Unabsorbed ⁱ	64.2 ± 6.1
Overall % Dose Recovered	89.7 ± 1.0

^aAll values expressed as mean ± standard deviation (SD) (N = 5). The target dose was 0.3 mg dicyclohexylcarbodiimide/kg body weight. The actual dose delivered was 0.3 ± 0.01 mg/kg (12.5 ± 0.04 μCi/animal). Animals were weighted prior to shaving ca. 24 hours prior to 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 [¹⁴C]DCC. The appliance frame (self-adhesive foam pad) was covered by 50/50 polyester/cotton sheeting taped to the frame and covered by a metal appliance shield.

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(continued)**

^bCPDE = Cumulative percent dose excreted.

^cVolatile organics and CO₂ in exhaled breath.

^dNC = not collected. No collection was scheduled for this time interval.

^eUrine value includes cage rinse.

^fTBR = Tissue/Blood ratio.

^gPercent Dose was calculated using the following values for the mass of total tissue, expressed as percent of body weight: adipose, 7.0%; blood, 5.2%; muscle, 48%; and skin, 17%.

^hSelected tissues are kidney, liver, lung, spleen, heart, testes, bladder, brain, and blood.

ⁱTotal radioactivity in the appliance and skin wash.