

Distribution of [^{14}C]Choline Derived Radioactivity 24 Hours Following Oral Administration of 160 mg/kg [^{14}C]Choline to Female B6C3F₁ Mice (Choline Study D)^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
1	d	e	0.0804 ± 0.0180	1.24 ± 0.31	1.33 ± 0.32
2	d	e	0.263 ± 0.092	5.36 ± 1.06	5.62 ± 0.99
3	d	e	1.10 ± 1.07	9.54 ± 2.84	10.6 ± 2.8
4	3.44 ± 2.38	e	1.82 ± 1.88	12.3 ± 4.0	17.5 ± 4.3
6	d	e	2.23 ± 2.40	16.1 ± 5.0	21.8 ± 6.0
8	12.9 ± 6.6	2.07 ± 3.06	3.03 ± 3.57	18.9 ± 5.1	36.9 ± 9.9
12	26.7 ± 12.1	e	3.40 ± 3.66	21.5 ± 5.3	53.7 ± 15.7
24 ^f	31.8 ± 11.1	2.62 ± 3.34	3.61 ± 3.75	24.5 ± 5.4	62.5 ± 14.6

Distribution in Tissues (24 hours)

Tissue	nmol-eq Choline/g Mean	nmol-eq Choline/g SD	TBR ⁱ Mean	TBR SD	Dose in Total Tissue (%) Mean	Dose in Total Tissue (%) SD
Adipose ^g	175	45	1.28	0.39	0.891	0.060
Urinary Bladder	465	250	3.77	0.79	0.0196	0.0039
Blood ^g	166	58	Unity	—	0.521	0.125
Brain	143	68	1.09	0.11	0.163	0.045
Heart	535	201	4.13	1.22	0.137	0.015
Kidney	1240	533	9.36	1.34	0.892	0.062
Liver	1164	401	8.01	0.34	4.03	0.56
Lung	865	443	6.52	0.20	0.365	0.034
Muscle ^g	190	102	1.42	0.02	5.08	1.64
Skin ^g	172	78	1.27	0.07	2.00	0.47
Spleen	572	276	4.50	0.87	0.0979	0.0043
Thyroid	871	575	3.77	0.79	0.0019	0.0002
Uterus	674	508	5.36	0.66	0.0651	0.0348
Stomach ^h	NA ⁱ	—	NA	—	0.339	0.093
Small Intestine ^h	NA	—	NA	—	1.93	0.03
Cecum ^h	NA	—	NA	—	0.249	0.020
Large Intestine ^h	NA	—	NA	—	0.331	0.032
Carcass ^j	NA	—	NA	—	1.30	5.53

Disposition Summary [Dose Recovered (%)]

Tissues and GI Tract	Excreted	Total
18.2 ± 2.9	62.5 ± 14.6	80.8 ± 16.7

^aAll values expressed as mean ± standard deviation (SD) (N = 3). The target dose was 160 mg choline/kg. The actual dose delivered was 194 ± 40 mg/kg (142 ± 29 µCi/kg). Animals received a single oral dose of DMAE vehicle (water, 0 mg DMAE/kg) approximately 1 hour (h) prior to [^{14}C]choline administration.

^bCPDE = Cumulative percent dose excreted.

^cVolatile organics (trapped by isopropanol) and CO₂ (trapped by 1 N NaOH in H₂O) in exhaled breath.

^dUrine was collected at 4, 8, 12, and 24 h after [^{14}C]choline administration.

^eFeces were collected at 8 and 24 h after [^{14}C]choline administration.

^f24 h urine collection includes urine present in the urinary bladder at study termination.

^gPercent of dose in these tissues calculated using the following percentages of body weight: adipose 7.0%, blood 4.9%, muscle 38.4%, and skin 16.5%.

^hIncludes contents.

ⁱNA = Not applicable.

^jCarcass values are based on the residual digested carcass after the removal of the listed tissues (i.e., percent dose measured in skin, adipose, blood, and muscle was subtracted from the total percent dose measured in the carcass).

^kTBR = Tissue to blood ratio.