

**Distribution of [¹⁴C]Choline Derived Radioactivity 24 Hours Following Oral Administration
of 160 mg/kg [¹⁴C]Choline to Female B6C3F₁ Mice
Pretreated with unlabeled 500 mg/kg DMAE (Choline Study H)^{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	0.109 ± 0.034	1.97 ± 0.15	2.08 ± 0.18
2	d	e	0.361 ± 0.164	5.03 ± 0.22	5.39 ± 0.34
3	d	e	1.27 ± 1.46	8.14 ± 1.45	9.41 ± 2.08
4	11.8 ± 7.1	e	1.71 ± 1.83	11.2 ± 3.3	24.8 ± 6.2
6	d	e	1.94 ± 1.82	15.8 ± 5.2	29.5 ± 8.1
8	22.0 ± 4.0	9.02 ± 8.03	2.11 ± 1.83	19.1 ± 6.1	52.2 ± 6.6
12	28.4 ± 7.6	e	2.26 ± 1.79	22.8 ± 7.4	62.5 ± 8.9
24 ^f	32.4 ± 7.2	11.2 ± 5.9	2.41 ± 1.77	26.4 ± 8.6	72.4 ± 6.0

Distribution in Tissues (24 hours)

Tissue	nmol-eq Choline/g Mean	nmol-eq Choline/g SD	TBR ^k Mean	TBR SD	Dose in Total Tissue (%) Mean	Dose in Total Tissue (%) SD
Adipose ^g	197	121	1.75	0.81	1.30	0.86
Urinary Bladder	222	31	2.17	0.86	0.0196	0.0137
Blood ^g	113	49	Unity	—	0.514	0.252
Brain	86.9	35.7	0.774	0.041	0.177	0.109
Heart	274	60	2.57	0.56	0.133	0.047
Kidney	752	276	6.74	1.10	0.846	0.473
Liver	1178	699	10.1	2.3	5.96	4.02
Lung	545	178	4.99	0.94	0.342	0.180
Muscle ^g	80.9	11.1	0.783	0.243	2.83	0.35
Skin ^g	122	55	1.07	0.05	1.86	0.95
Spleen	276	89	2.52	0.36	0.0832	0.0512
Thyroid	412	231	4.40	2.93	0.0029	0.0014
Uterus	315	83	2.92	0.49	0.117	0.032
Stomach ⁿ	NA ⁱ	—	NA	—	0.323	0.184
Small Intestine ⁿ	NA	—	NA	—	2.15	0.97
Cecum ⁿ	NA	—	NA	—	0.206	0.066
Large Intestine ⁿ	NA	—	NA	—	0.264	0.113
Carcass ^j	NA	—	NA	—	1.29	1.29

Disposition Summary [Dose Recovered (%)]

Tissues and GI Tract	Excreted	Total
18.4 ± 9.8	72.4 ± 6.0	90.8 ± 8.6

^aAll values expressed as mean ± standard deviation (SD) (N = 3). The target dose was 160 mg choline/kg. The actual dose delivered was 154 ± 8 mg/kg (133 ± 7 µCi/kg). Animals received a single oral dose of DMAE (target 500 mg DMAE/kg) approximately 1 hour (h) prior to [¹⁴C]choline administration. The actual DMAE dose delivered was 481 ± 44 mg/kg.

^bCPDE = Cumulative percent dose excreted.

^cVolatile organics trapped by isopropanol and CO₂ trapped by 1 N NaOH in H₂O (N = 2, H001 and H003) or ethylene glycol monomethyl ether and ethanolamine (7:3) (N = 1, H005) in exhaled breath. In consultation with the sponsor the efficiency of trapping of CO₂ by sodium hydroxide, ethylene glycol monomethyl ether, and ethanolamine was tested in this study.

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

^eFeces were collected at 8 and 24 h after [¹⁴C]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.