

Recovery of [^{14}C]Choline Derived Radioactivity 24 Hours Following Oral Administration of 160 mg/kg [^{14}C]Choline to Naïve Female Wistar Han Rats (Vehicle Only, Choline Study E)^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	0.0304 ± 0.0055	0.476 ± 0.093	0.506 ± 0.088
2	d	e	0.0650 ± 0.0052	1.37 ± 0.34	1.44 ± 0.34
3	d	e	0.109 ± 0.013	2.98 ± 0.61	3.09 ± 0.61
4	1.40 ± 0.61	e	0.148 ± 0.017	4.53 ± 0.91	6.08 ± 1.35
6	d	e	0.189 ± 0.023	7.44 ± 1.18	9.02 ± 1.68
8	9.16 ± 4.55	0.104 ± 0.178	0.225 ± 0.026	10.2 ± 1.1	19.7 ± 4.3
12	26.4 ± 5.9	–	0.277 ± 0.022	13.7 ± 1.1	40.5 ± 5.3
24 ^f	34.2 ± 7.9	12.9 ± 10.0	0.325 ± 0.025	17.8 ± 1.7	65.2 ± 8.6

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	102	44	0.453	0.211	0.613	0.255
Urinary Bladder	305	79	1.31	0.22	0.0093	0.0019
Blood ^g	228	24	Unity	–	1.46	0.15
Brain	138	2415	0.604	0.102	0.100	0.037
Heart	413	69	1.80	0.18	0.132	0.012
Kidney	1276	195	5.62	0.97	0.787	0.124
Liver	2311	480	10.1	1.5	6.94	1.51
Lung	861	141	3.78	0.56	0.407	0.117
Muscle ^g	156	22	0.693	0.128	5.46	0.71
Skin ^g	287	46	1.27	0.23	4.71	0.70
Spleen	763	119	3.33	0.22	0.157	0.020
Thyroid	591	272	2.56	1.11	0.0102	0.0043
Uterus	520	132	2.26	0.40	0.123	0.083
Stomach ^h	NA ⁱ	–	NA	–	0.414	0.074
Small Intestine ^h	NA	–	NA	–	2.01	1.07
Cecum ^h	NA	–	NA	–	0.327	0.017
Large Intestine ^h	NA	–	NA	–	1.27	0.90
Carcass ^j	NA	–	NA	–	1.22	1.68

Disposition Summary [Dose Recovered (%)]

Tissues and GI Tract	Excreted	Total
26.1 ± 3.8	65.2 ± 8.6	91.3 ± 9.6

^aAll values expressed as mean ± standard deviation (SD) (N = 5). The target dose was 160 mg choline/kg. The actual dose delivered was 161 ± 3 mg/kg (54.4 ± 1.0 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 7.4%, muscle 40.4%, and skin 19.0%.

^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.