Distribution of [^{14}C]Choline Derived Radioactivity 24 Hours Following Oral Administration of 160 mg/kg [^{14}C]Choline to Female Han Wistar Rats Pretreated with unlabeled DMAE (100 mg/kg, Choline Study F)[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	0.0294 ± 0.0074	0.402 ± 0.123	0.432 ± 0.123
2	d	e	0.0629 ± 0.0091	1.53 ± 0.24	1.60 ± 0.24
3	d	e	0.0931 ± 0.0110	3.48 ± 0.25	3.57 ± 0.25
4	1.32 ± 0.97	e	0.126 ± 0.011	5.59 ± 0.26	7.03 ± 1.12
6	d	e	0.156 ± 0.015	10.1 ± 0.6	11.6 ± 1.49
8	8.29 ± 4.54	0.0353 ± 0.0351[f]	0.187 ± 0.014	13.6 ± 1.0	22.1 ± 4.4
12	24.0 ± 5.6	e	0.228 ± 0.017	18.0 ± 2.5	42.2 ± 4.8
24[g]	34.7 ± 5.7	10.8 ± 6.0	0.268 ± 0.026	22.5 ± 4.4	68.2 ± 7.1

Distribution in Tissues (24 hours)

Tissue	nmol-eq Choline/g Mean	nmol-eq Choline/g SD	TBR[l] Mean	TBR SD	Dose in Total Tissue (%) Mean	Dose in Total Tissue (%) SD
Adipose[h]	73.9	10.0	0.320	0.079	0.462	0.059
Urinary Bladder	380	124	1.54	0.31	0.0085	0.0044
Blood[h]	236	35	Unity	–	1.56	0.23
Brain	131	32	0.554	0.094	0.106	0.032
Heart	385	84	1.64	0.35	0.121	0.023
Kidney	1152	226	4.87	0.57	0.710	0.214
Liver	2402	362	10.2	0.8	7.30	1.28
Lung	840	165	3.55	0.41	0.426	0.089
Muscle[h]	165	28	0.705	0.138	5.95	0.99
Skin[h]	269	13	1.15	0.15	4.57	0.26
Spleen	735	171	3.09	0.33	0.159	0.041
Thyroid	910	366	3.75	0.93	0.0055	0.0013
Uterus	595	131	2.52	0.47	0.0914	0.0380
Stomach[i]	NA[j]	–	NA	–	0.322	0.063
Small Intestine[i]	NA	–	NA	–	2.26	0.21
Cecum[i]	NA	–	NA	–	0.291	0.057
Large Intestine[i]	NA	–	NA	–	0.364	0.106
Carcass[k]	NA	–	NA	–	0	0

Disposition Summary [Dose Recovered (%)]

Tissues and GI Tract	Excreted	Total
24.7 ± 2.7	68.2 ± 7.1	92.9 ± 4.8

[a]All values expressed as mean ± standard deviation (SD) (N = 4). The target dose was 160 mg choline/kg. The actual dose delivered was 161 ± 1 mg/kg (57.5 ± 0.5 µCi/kg). Animals received a single oral dose of DMAE (target 100 mg DMAE/kg) approximately 1 h prior to [^{14}C]choline administration. The actual DMAE dose delivered was 99.4 ± 0.2 mg/kg.
[b]CPDE = Cumulative percent dose excreted.
[c]Volatile organics (trapped by isopropanol) and CO_2 (trapped by 1 N NaOH in H_2O) in exhaled breath.
[d]Urine was collected at 4, 8, 12, and 24 h after [^{14}C]choline administration.
[e]Feces were collected at 8 and 24 h after [^{14}C]choline administration.
[f]N = 2. Feces were present at 8 h for two animals only (F001 and F003).
[g]24 h urine collection includes urine present in the urinary bladder at study termination.
[h]Percent 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%.
[i]Includes contents.
[j]NA = Not applicable.
[k]Carcass 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).
[l]TBR = Tissue to blood ratio.