

Distribution of Radioactivity 24 Hours Following Oral Administration of 500 mg/kg [¹⁴C]DMAE to Male Wistar Han Rats (DMAE 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
1	d	e	0.0224 ± 0.0018	0.251 ± 0.085	0.274 ± 0.084
2	d	e	0.0426 ± 0.0036	0.536 ± 0.168	0.578 ± 0.165
3	d	e	0.0612 ± 0.0061	0.833 ± 0.234	0.894 ± 0.228
4	14.6 ± 2.6	e	0.103 ± 0.036	1.13 ± 0.26	15.8 ± 2.9
6	d	e	0.135 ± 0.043	1.73 ± 0.46	16.5 ± 3.0
8	35.9 ± 5.6	0.364 ± 0.511	0.159 ± 0.047	2.40 ± 0.53	38.9 ± 4.8
12	50.4 ± 3.0	e	0.186 ± 0.040	3.21 ± 0.55	54.1 ± 3.1
24 ^f	62.1 ± 1.5	0.518 ± 0.472	0.198 ± 0.038	4.78 ± 0.81	67.8 ± 1.0

Distribution in Tissues (24 hours)

Tissue	nmol-eq DMAE/g Mean	nmol-eq DMAE/g SD	TBR ^k Mean	TBR SD	Dose in Total Tissue (%) Mean	Dose in Total Tissue (%) SD
Adipose ^g	1332	1259	1.42	1.41	1.56	1.53
Urinary Bladder	6075	3126	6.38	3.47	0.0431	0.0403
Blood ^g	958	54	Unity	—	1.17	0.02
Brain	1621	123	1.69	0.11	0.152	0.022
Heart	1631	127	1.70	0.09	0.0727	0.0049
Kidney	8239	1047	8.58	0.63	0.882	0.085
Liver	13623	1509	14.2	1.1	7.46	0.41
Lung	4561	925	4.78	1.09	0.334	0.048
Muscle ^g	808	119	0.841	0.080	5.37	0.57
Skin ^g	1248	120	1.30	0.06	3.91	0.22
Spleen	4267	197	4.46	0.16	0.151	0.023
Thyroid	8608	1569	8.95	1.16	0.0023	0.0008
Testes	1276	230	1.33	0.18	0.245	0.045
Stomach ^h	NA ⁱ	—	NA	—	0.558	0.018
Small Intestine ^h	NA	—	NA	—	1.82	0.19
Cecum ^h	NA	—	NA	—	0.236	0.047
Large Intestine ^h	NA	—	NA	—	0.377	0.063
Carcass ^j	NA	—	NA	—	0	0

Disposition Summary [Dose Recovered (%)]

Tissues and GI Tract	Excreted	Total
24.3 ± 2.1	67.8 ± 1.0	92.1 ± 1.9

^aAll values expressed as mean ± standard deviation (SD) (N = 3). The target dose was 500 mg DMAE/kg. The actual dose delivered was 506 ± 5 mg/kg (49.8 ± 0.4 µCi/kg).

^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 hours (h) after [¹⁴C]DMAE administration.

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