

Distribution of Radioactivity 24 Hours Following Oral Administration of 100 mg/kg [¹⁴C]DMAE to Male Wistar Han Rats (DMAE Study H)^a

Dose Recovered in Excreta (%)

End of Collection Period (h)	Urine CPDE ^b	Feces CPDE	CO ₂ ^c CPDE	Total CPDE
1	d	e	0.450 ± 0.056	0.450 ± 0.056
2	d	e	1.20 ± 0.26	1.20 ± 0.26
3	d	e	1.68 ± 0.39	1.68 ± 0.39
4	33.4 ± 9.4	e	2.10 ± 0.43	35.5 ± 9.1
6	d	e	2.57 ± 0.47	36.0 ± 9.1
8	45.4 ± 6.7	0.0214 ± 0.0062	3.00 ± 0.46	48.4 ± 6.4
12	51.7 ± 5.6	e	3.49 ± 0.48	52.2 ± 5.2
24f	58.6 ± 5.1	0.302 ± 0.061	4.84 ± 0.70	63.8 ± 4.5

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	98.6	53.6	0.625	0.282	0.632	0.360
Urinary Bladder	410	72	2.72	0.77	0.00956	0.00317
Blood ^g	154	19	Unity		1.04	0.15
Brain	371	26	2.42	0.23	0.225	0.022
Heart	299	38	1.94	0.19	0.0859	0.0132
Kidney	1910	348	12.4	2.0	1.18	0.21
Liver	2990	638	19.3	3.6	9.60	1.83
Lung	987	284	6.38	1.67	0.405	0.082
Muscle ^g	192	32	1.25	0.14	7.05	1.33
Skin ^g	255	31	1.66	0.12	4.41	0.66
Spleen	783	98	5.13	0.86	0.152	0.037
Thyroid	904	397	5.80	2.44	0.00321	0.00074
Testes	236	26	1.54	0.20	0.234	0.034
Stomach ^h	NA ⁱ	—	NA	—	0.323	0.049
Small Intestine ^h	NA	—	NA	—	2.36	0.50
Cecum ^h	NA	—	NA	—	0.216	0.045
Large Intestine ^h	NA	—	NA	—	0.349	0.046
Carcass ^j	NA	—	NA	—	1.87	1.66

Disposition Summary [Dose Recovered (%)]

Tissues and GI Tract	Excreted	Total
30.1 ± 3.8	63.8 ± 4.5	93.9 ± 2.9

^aAll values expressed as mean ± standard deviation (SD)(N = 5). The target dose was 100 mg DMAE/kg. The actual dose delivered was 98.5 ± 5.5 mg/kg (49.2 ± 2.7 µCi/kg).

^bCPDE = Cumulative percent dose excreted.

^cCO₂ (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.