

Distribution of Radioactivity 24 Hours Following Oral Administration of 10 mg/kg [¹⁴C]DMAE to Male Wistar Han Rats (DMAE 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 | 0.0163 ± 0.0031 | 0.367 ± 0.129 | 0.383 ± 0.126 |
| 2 | d | e | 0.0342 ± 0.0066 | 0.770 ± 0.198 | 0.804 ± 0.193 |
| 3 | d | e | 0.0484 ± 0.0040 | 1.04 ± 0.19 | 1.09 ± 0.18 |
| 4 | 31.1 ± 4.6 | e | 0.0615 ± 0.0044 | 1.26 ± 0.19 | 32.4 ± 4.5 |
| 6 | d | e | 0.0766 ± 0.0058 | 1.63 ± 0.23 | 32.8 ± 4.6 |
| 8 | 42.5 ± 2.6 | 0.0469 ± 0.0851 | 0.0987 ± 0.0079 | 1.90 ± 0.23 | 44.5 ± 2.8 |
| 12 | 48.2 ± 3.4 | e | 0.137 ± 0.036 | 2.38 ± 0.21 | 50.8 ± 3.6 |
| 24 ^f | 57.0 ± 4.1 | 0.206 ± 0.242 | 0.153 ± 0.037 | 3.67 ± 0.44 | 61.0 ± 4.1 |

Distribution in Tissues (24 hours)

| Tissue | Nmol-eq DMAE/g Tissue | Tissue/Blood Ratio | Dose in Total Tissue (%) |
|------------------------------|-----------------------|--------------------|--------------------------|
| Adipose ^g | 7.01 ± 1.68 | 0.316 ± 0.103 | 0.377 ± 0.091 |
| Urinary Bladder | 77.4 ± 13.8 | 3.31 ± 0.49 | 0.0169 ± 0.0093 |
| Blood ^g | 22.9 ± 4.3 | Unity | 1.30 ± 0.23 |
| Brain | 37.3 ± 3.9 | 1.65 ± 0.21 | 0.166 ± 0.016 |
| Heart | 38.3 ± 2.6 | 1.65 ± 0.22 | 0.0909 ± 0.0084 |
| Kidney | 235 ± 53 | 9.94 ± 1.86 | 1.16 ± 0.27 |
| Liver | 528 ± 93 | 22.4 ± 1.0 | 11.4 ± 1.1 |
| Lung | 142 ± 25 | 6.10 ± 1.01 | 0.496 ± 0.087 |
| Muscle ^g | 26.0 ± 2.1 | 1.16 ± 0.21 | 8.06 ± 0.63 |
| Skin ^g | 31.1 ± 6.1 | 1.36 ± 0.03 | 4.53 ± 0.82 |
| Spleen | 99.4 ± 16.7 | 4.25 ± 0.58 | 0.154 ± 0.030 |
| Thyroid | 134 ± 12 | 5.90 ± 1.58 | 0.0040 ± 0.0015 |
| Testes | 77 ± 106 | 3.62 ± 5.24 | 0.130 ± 0.095 |
| Stomach ^h | NA ⁱ | NA | 0.407 ± 0.053 |
| Small Intestine ^h | NA | NA | 2.93 ± 1.07 |
| Cecum ^h | NA | NA | 0.195 ± 0.010 |
| Large Intestine ^h | NA | NA | 0.363 ± 0.034 |
| Carcass ^j | NA | NA | 2.24 ± 1.37 |

Disposition Summary [Dose Recovered (%)]

| Tissues and GI Tract | Excreted | Total |
|----------------------|------------|------------|
| 33.9 ± 2.2 | 61.0 ± 4.1 | 94.9 ± 3.2 |

^aAll values expressed as mean ± standard deviation (SD) (N = 4). The target dose was 10 mg DMAE/kg. The actual dose delivered was 11.1 ± 0.2 mg/kg (55.7 ± 1.0 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).