Table 5. Benchmark dose modeling best-fit models (% cedarwood) of the most sensitive non-neoplastic dermal lesions in male and female F344 rats dermally administered cedarwood oil for 13 weeks.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sex | Endpoint | Model | AICa | GOFb | BMD10Pctc | BMDL10Pctd |
| Female | Hyperplasia, Epidermis | Gamma | 30.3 | 0.976 | 2.9 | 0.70 |
|  |  | Logistic | 31.5 | 0.849 | 2.1 | 2.1 |
|  |  | LogLogistic | 31.1 | 0.902 | 3.6 | 1.30 |
|  |  | Dichotomous-Hill | 31.1 | 0.902 | 3.6 | 1.30 |
|  |  | Probit | 31.1 | 0.893 | 3.4 | 2.0 |
|  |  | LogProbit | 30.7 | 0.943 | 3.6 | 1.22 |
|  |  | Weibull | 30.1 | 0.986 | 2.6 | 0.73 |
|  |  | Multistage 2° | 30.0 | 0.992 | 1.4 | 0.74 |
|  |  | Multistage 3° | 29.8 | 0.999 | 1.6 | 0.76 |
|  |  | Multistage 4° | 29.7 | 1.000 | 2.1 | 0.75 |
|  | Quantal-Linear | 29.6 | 0.944 | 1.0 | 0.65 |
| Hyperkeratosis, Epidermis | Gamma | 24.9 | 0.983 | 6.8 | 3.8 |
|  |  | Logistic | 24.7 | 0.995 | 7.1 | 4.3 |
|  |  | LogLogistic | 25.6 | 0.930 | 7.1 | 4.4 |
|  |  | Dichotomous-Hill | 25.6 | 0.930 | 7.1 | 4.4 |
|  |  | Probit | 24.5 | 0.999 | 6.7 | 4.0 |
|  |  | LogProbit | 25.4 | 0.947 | 6.8 | 4.4 |
|  |  | Weibull | 24.5 | 1.000 | 6.6 | 3.5 |
|  | Multistage 2° | 23.8 | 0.967 | 4.6 | 2.3 |
| Multistage 3° | 24.4 | 1.000 | 6.4 | 2.3 |
| Multistage 4° | 26.4 | 1.000 | 6.3 | 2.0 |
| Quantal-Linear | 30.5 | 0.347 | 1.5 | 1.0 |
| Hyperplasia, Sebaceous gland | Gamma | 24.8 | 0.966 | 8.6 | 5.2 |
|  | Logistic | 26.2 | 0.799 | 8.4 | 5.3 |
|  | LogLogistic | 24.7 | 0.975 | 8.8 | 5.8 |
|  | Dichotomous-Hill | 24.7 | 0.975 | 8.8 | 5.8 |
|  | Probit | 25.9 | 0.833 | 8.4 | 5.1 |
|  | LogProbit | 24.4 | 0.988 | 8.8 | 5.9 |
|  | Weibull | 25.5 | 0.910 | 7.9 | 4.3 |
|  | Multistage 2° | 24.6 | 0.918 | 5.8 | 3.2 |
|  | Multistage 3° | 25.5 | 0.882 | 8.3 | 3.4 |
|  | Multistage 4° | 25.5 | 0.882 | 8.3 | 3.1 |
|  | Quantal-Linear | 32.1 | 0.265 | 1.9 | 1.3 |
| Male | Chronic Active Inflammation | Gamma | 30.5 | 1.000 | 6.5 | 3.1 |
|  |  | Logistic | 31.1 | 0.980 | 7.0 | 4.4 |
|  |  | LogLogistic | 30.9 | 0.987 | 7.0 | 4.1 |
|  |  | Dichotomous-Hill | 30.9 | 0.987 | 7.0 | 4.1 |
|  |  | Probit | 30.9 | 0.989 | 6.7 | 4.2 |
|  |  | LogProbit | 30.8 | 0.991 | 6.8 | 4.1 |
|  |  | Weibull | 30.5 | 1.000 | 6.2 | 2.8 |
|  | Multistage 2° | 28.6 | 1.000 | 5.6 | 2.3 |
|  | Multistage 3° | 30.5 | 1.000 | 6.0 | 2.0 |
|  | Multistage 4° | 32.5 | 1.000 | 6.0 | 1.9 |
|  | Quantal-Linear | 33.8 | 0.528 | 1.8 | 1.2 |
| Hyperkeratosis, Epidermis | Gamma | 22.8 | 1.000 | 12.8 | 8.3 |
|  | Logistic | 23.2 | 0.991 | 13.8 | 9.0 |
|  | LogLogistic | 23.1 | 0.993 | 13.1 | 8.8 |
|  | Dichotomous-Hill | 23.1 | 0.993 | 13.1 | 8.8 |
|  |  | Probit | 23.0 | 0.998 | 13.3 | 8.5 |
|  |  | LogProbit | 22.9 | 0.999 | 12.8 | 8.8 |
|  |  | Weibull | 22.9 | 0.999 | 13.0 | 7.8 |
|  |  | Multistage 2° | 23.6 | 0.865 |  8.2 | 5.3 |
|  |  | Multistage 3° | 21.2 | 0.998 | 11.4 | 6.7 |
|  |  | Multistage 4° | 22.9 | 0.999 | 13.1 | 6.7 |
| Fibrosis, Dermis | Gamma | 14.8 | 1.000 | 16.2 | 11.6 |
|  |  | Logistic | 16.2 | 1.000 | 23.1 | 12.7 |
|  |  | LogLogistic | 14.2 | 1.000 | 21.1 | 12.3 |
|  |  | Dichotomous-Hill | 14.2 | 1.000 | 21.1 | 17.1 |
|  |  | Probit | 16.2 | 1.000 | 21.4 | 12.2 |
|  |  | LogProbit | 16.2 | 1.000 | 20.4 | 12.1 |
|  |  | Multistage 2° | 20.9 | 0.568 |  8.6 |  6.0 |
|  |  | Multistage 3° | 17.2 | 0.886 | 12.0 |  8.5 |
|  |  | Multistage 4° | 15.7 | 0.976 | 14.0 | 10.1 |

a AIC – Akaike information criterion

b GOF – goodness of fit p-value

c BMD – benchmark dose (% cedarwood oil)

d BMDL – lower 95% confidence limit of benchmark dose (% cedarwood oil)