

APPENDIX A

Table A-6. Model Predictions for Squamous Metaplasia of the Epiglottis in Female Rats Exposed to Molybdenum Trioxide (NTP 1997)

Model	DF	χ^2	χ^2 Goodness- of-fit p-value ^a	Scaled residuals ^b			Overall largest AIC	BMC ₁₀ (mg/m ³)	BMCL ₁₀ (mg/m ³)
				Dose below BMC	Dose above BMC				
Gamma ^c	2	2.05	0.36	0.00	1.00	1.00	146.51	1.97	1.60
Logistic	2	15.55	0.00	-2.67	2.17	-2.67	163.85	ND	ND
LogLogistic ^d	1	5.02	0.03	-0.00	0.82	-1.58	152.04	ND	ND
LogProbit ^e	2	4.16	0.12	-0.00	0.79	-1.51	148.92	2.76	1.41
Multistage (1-degree) ^e	3	2.05	0.56	-0.00	1.00	1.00	144.51	1.97	1.60
Multistage (2-degree) ^e	1	2.05	0.15	-0.00	1.04	1.04	148.50	1.99	1.60
Multistage (3-degree) ^e	1	1.98	0.16	-0.00	1.11	1.11	148.42	2.02	1.61
Probit	2	17.51	0.00	-2.85	2.00	-2.13	166.05	ND	ND
Weibull^f	3	2.05	0.56	-0.00	1.00	1.00	144.51	1.97	1.60

^aValues <0.1 fail to meet conventional goodness-of-fit criteria.

^bScaled residuals at doses immediately below and above the BMC; also the largest residual at any dose.

^cPower restricted to ≥ 1 .

^dSlope restricted to ≥ 1 .

^eBetas restricted to ≥ 0 .

^fSelected model. BMCLs for models providing adequate fit were sufficiently close (differed by <3-fold). Therefore, the model with the lowest AIC was selected.

AIC = Akaike Information Criterion; BMC = maximum likelihood estimate of the exposure concentration associated with the selected benchmark response; BMCL = 95% lower confidence limit on the BMC (subscripts denote benchmark response: i.e., ₁₀ = exposure concentration associated with 10% extra risk); DF = degrees of freedom; ND = not determined, goodness-of-fit criteria, p<0.10