Ausgesucht

Die Vielfalt an statistischen Methoden ist groß. Zur Biotestauswertung braucht man nur ganz Bestimmte davon. Die Auswahl nehmen wir Ihnen ab. ToxRat kann das, was nötig ist.

Effektiv

Simple statistics:

- mean, median, standard deviation, coefficient of variation, confidence interval, minimum and maximum

Statistical testing

- **Variance analysis** (ANOVA, Kruskal-Wallis Test, chi^2- and exact contingency table tests)
- **Analysis of Variance plus Trend** (Jonckheere-Terpstra, Cochran Armitage)
- **Pretests on normal distribution** (R/S-Test, Kolmogorrov-Smirnov Test, Shapiro Wilks Test)
- **Pre-tests on homogenity of variance** (Cochran, Bartlett, Levene, Tarone test for extrabinomial variance)
- **Tests for monotony** (linear + quadratic contrasts, (Rao-Scott-) Cochran Armitage Trend Test, Jonckheere-Terpstra Trend Test)
- **Pairwise (two-sample) comparisons** (Student-t-Test, Welch-t-Test, Mann-Whitney-U-Test, Mediantest, Fisher Exact Binomial Test, Chi2 Fourfold Table Test)
- **Multiple Comparisons** (t-Test with Bonferroni-Correction, Dunnett Test, Williams Test, Welch-t-Test with Bonferroni-Correction, Step down Jonckheere Terpstra Test, Bonferroni-Median test, Wilcoxon-Mann-Withney-U-Test with Bonferroni Correction, Step down (Rao Scott-) Cochran Armitage Test, Chi^2 - and Fisher Exact Test with Bonferroni Correction)
- **Tests for outliers** (Dixon/Grubbs, Hampel outlier test)

Several **data transfomations** available

Dose-Response-Curves / Find effect levels: up to 6 user definable effect levels, 95% Confidence limits

Linear regression (metric and quantal variables):

- Functions: Probit, Logit, Weibull
- Fitting algorithms: linear / linear weighted / linear max. likelihood
- Confidence limits: Fieller´s Theorem, Normal Approximation, Bootstrap procedure
- Correction of variance for covariance of control
- Abbott Correction
- Parallel Line Assay and Potency Estimation

Non-linear regression (only metric variables):

- 2-3-4 parameter Normal, Sigmoid (Bruce-Versteeg)
- 2-3-4 paramter Logistic
- 2-3-4 Parameter Weibull
- Weighting: relative, Poisson, by variability
- Optimization methods: Levenberg-Marquardt, Downhill-Simplex
- Confidence limits: Monte carlo Simulation, Bootstrap procedure

Interpolation methods to determine the EC50 for quantal data:
(Trimmed) Spearman Kärber, Moving Averages, Binomial estimation

nach oben