

Joint Research Centre

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Technology portfolio

Stat4Tox

Description

Stat4Tox is a software tool that provides novel statistical analysis techniques for toxicological data, including dose-response modelling, via a user friendly graphical user interface.

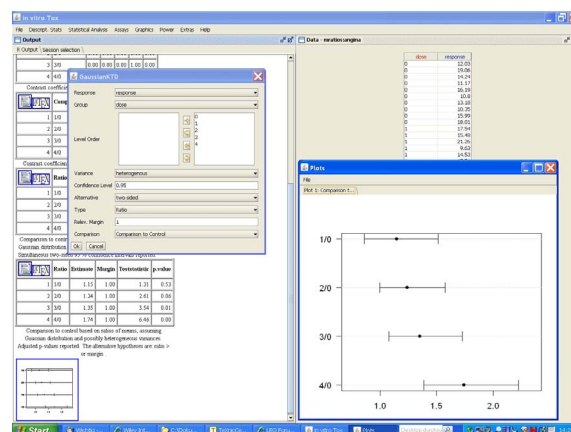
Stat4Tox has been specifically developed to allow interpretation of both statistical significance and biological relevance. It can be used for the analysis of in vitro concentration-response curves, including the estimation of Effective Concentration values. The statistical methods are based on several applications for the free statistical software R.

Innovative aspects and main advantages

- ▶ Robust dose-response modelling for estimating EC50 and its confidence interval
- ▶ Inference methods for continuous data (parametric and non-parametric) counts and proportions.
- ▶ Confidence intervals for both the difference-to-control and the ratio-to-control, allowing interpretation of both statistical significance and biological relevance.
- ▶ Evaluation of one-way layouts, allowing the inclusion of secondary covariates or hierarchical layouts.
- ▶ Provides Dunnett-type procedures for comparison of treatments versus a control, or Williams – type trend test for the comparison of doses versus control under the assumption of monotonicity for normally distributed endpoints, arbitrarily distributed endpoints, counts and proportions.
- ▶ Provides comparison procedures versus control without multiplicity adjustment.
- ▶ In addition to inferential statistics, descriptive statistics and diagnostic graphics are available, such as a modified version of box-plots.

Areas of application

- ▶ Academic research
- ▶ Industry
- ▶ National and international research institutes



Maturity and availability

- ▶ Mature product (available under EUPL licence)
- ▶ Stat4Tox is available for download (free of charge) from the JRC web site at: http://ihcp.jrc.ec.europa.eu/our_labs/computational_toxicology/qsar_tools/stat4tox

Prerequisites:

- ▶ The statistical software R (available at: <http://cran.r-project.org/>)
- ▶ Java 6 (available at: <http://www.java.com>)

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Licensing contact

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