Package ‘ec50estimator’

October 13, 2022

Type Package
Title An Automated Way to Estimate EC50 for Stratified Datasets
Version 0.1.0
Date 2020-09-07
Maintainer Kaique dos S. Alves <kaiquedsalves@gmail.com>
Description An implementation for estimating Effective control to 50% of growth inhibition (EC50) for multi isolates and stratified datasets. It implements functions from the drc package in a way that is displayed a tidy data.frame as output. Info about the drc package is available in Ritz C, Baty F, Streibig JC, Gerhard D (2015) <doi:10.1371/journal.pone.0146021>.
License MIT + file LICENSE
Encoding UTF-8
LazyData true
Imports dplyr, tidyr, tibble, magrittr, drc
RoxygenNote 7.0.2
VignetteBuilder knitr
Suggests knitr, rmarkdown, ggplot2, ggridges, cowplot
URL https://github.com/AlvesKS/ec50estimator
BugReports https://github.com/AlvesKS/ec50estimator/issues
NeedsCompilation no
Author Kaique dos S. Alves [aut, cre]
  (<https://orcid.org/0000-0001-9187-0252>)
Repository CRAN
Date/Publication 2020-09-15 09:40:06 UTC

R topics documented:

  estimate_EC50 ..................................................... 2
  multi_isolate .................................................... 3

Index 4
estimate_EC50 Estimate Effective dose (EC50) for multi isolate data set

Description
Estimate Effective dose (EC50) for multi isolate stratified data set.

Usage
estimate_EC50(formula, data, EC_lvl = 50, isolate_col, strata_col = NULL, fct, interval = c("none", "delta", "f1s", "t1s"))

Arguments
formula An object of class "formula." (e.g. growth ~ dose)
data A data.frame in which the dose-response data is in
EC_lvl Define the EC level. Default is 50
isolate_col indicate the isolate column. Indicate the name inside "". (e.g. "isolates")
strata_col indicate the strata columns. If there are more then one columns, indicate as a vector (e.g. c("region", "field"))
fct A list with three or more elements specifying the non-linear function. Please, inform the model function with the :: operator to inform the drc package (e.g. drc::LL.4()). For more info, see "drm".
interval A character string specifying the type of confidence intervals to be supplied. For more information see "ED"

Examples
# Load data
data(multi_isolate)
df_ec50 = estimate_EC50(growth~dose,
data = multi_isolate,
isolate_col = "isolate",
strata_col = c("field","fungicida"),
interval = "delta",
fct = drc::LL.3())
head(df_ec50)
**multi_isolate**

**Multi isolate dataset**

**Description**

Dataset containing simulated data of mycelial growth under increasing fungicide doses for 50 fungal isolates, two types of field (conventional and organic), and two different fungicides.

**Usage**

```r
data("multi_isolate")
```

**Format**

A data frame with 3500 observations on the following 5 variables.

- *isolate* a numeric vector
- *field* a factor with levels Conventional Organic
- *fungicida* a factor with levels Fungicide A Fungicide B
- *dose* a numeric vector
- *growth* a numeric vector

**Examples**

```r
data(multi_isolate)
## maybe str(multi_isolate) ; plot(multi_isolate) ...
```
Index

* datasets
  - multi_isolate, 3

drm, 2
ED, 2
estimate_EC50, 2
formula, 2
multi_isolate, 3