Package ‘ec50estimator’

September 15, 2020

Type Package
Title An Automated Way to Estimate EC50 for Stratified Datasets
Version 0.1.0
Date 2020-09-07
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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
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Repository CRAN
Date/Publication 2020-09-15 09:40:06 UTC

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estimate_EC50  

Estimate Effective dose (EC50) for multi isolate data set

Description

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

Usage

```r
estimate_EC50(formula, data, EC_lvl = 50, isolate_col, strata_col = NULL, fct, interval = c("none", "delta", "fls", "tfls"))
```

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 than 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

```r
# 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)
```
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

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

data(multi_isolate)
## maybe str(multi_isolate) ; plot(multi_isolate) ...
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