

Package ‘ICAMSxtra’

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Title ICAMSxtra

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Description ICAMSxtra.

License GPL-3

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Suggests testthat

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PlotExposure	<i>Plot exposures in multiple plots each with a manageable number of samples</i>
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Description

Plot exposures in multiple plots each with a manageable number of samples

Usage

```
PlotExposure(
  exposure,
  samples.per.line = 30,
  plot.proportion = FALSE,
  xlim = NULL,
  ylim = NULL,
  legend.x = NULL,
  legend.y = NULL,
  cex.legend = 0.9,
  ...
)
```

Arguments

<code>exposure</code>	Exposures as a numerical matrix (or <code>data.frame</code>) with signatures in rows and samples in columns. Rownames are taken as the signature names and column names are taken as the sample IDs. If you want exposure sorted from largest to smallest, use SortExposure . Do not use column names that start with multiple underscores. The exposures will often be mutation counts, but could also be e.g. mutations per megabase.
<code>samples.per.line</code>	Number of samples to show in each plot.
<code>plot.proportion</code>	Plot exposure proportions rather than counts.
<code>xlim, ylim</code>	Limits for the x and y axis. If <code>NULL</code> (default), the function tries to do something reasonable.
<code>legend.x, legend.y</code>	The x and y co-ordinates to be used to position the legend.
<code>cex.legend</code>	A numerical value giving the amount by which legend plotting text and symbols should be magnified relative to the default.
<code>...</code>	Other arguments passed to barplot . If <code>ylab</code> is not included, it defaults to a value depending on <code>plot.proportion</code> . If <code>col</code> is not supplied the function tries to do something reasonable.

Value

An **invisible** list whose first element is a logic value indicating whether the plot is successful. The second element is a numeric vector giving the coordinates of all the bar midpoints drawn, useful for adding to the graph.

Examples

```
file <- system.file("extdata",
                    "synthetic.exposure.csv",
                    package = "ICAMSxtra")
exposure <- ReadExposure(file)
PlotExposure(exposure[, 1:30])
```

PlotExposureToPdf	<i>Plot exposures in multiple plots each with a manageable number of samples to PDF</i>
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Description

Plot exposures in multiple plots each with a manageable number of samples to PDF

Usage

```
PlotExposureToPdf(
  exposure,
  file,
  mfrow = c(2, 1),
  mar = c(6, 4, 3, 2),
  oma = c(3, 2, 0, 2),
  samples.per.line = 30,
  plot.proportion = FALSE,
  xlim = NULL,
  ylim = NULL,
  legend.x = NULL,
  legend.y = NULL,
  cex.legend = 0.9,
  ...
)
```

Arguments

exposure	Exposures as a numerical matrix (or data.frame) with signatures in rows and samples in columns. Rownames are taken as the signature names and column names are taken as the sample IDs. If you want exposure sorted from largest to smallest, use SortExposure . Do not use column names that start with multiple underscores. The exposures will often be mutation counts, but could also be e.g. mutations per megabase.
file	The name of the PDF file to be produced.
mfrow	A vector of the form c(nr, nc). Subsequent figures will be drawn in an nr-by-nc array on the device by rows.
mar	A numerical vector of the form c(bottom, left, top, right) which gives the number of lines of margin to be specified on the four sides of the plot.
oma	A vector of the form c(bottom, left, top, right) giving the size of the outer margins in lines of text.
samples.per.line	Number of samples to show in each plot.
plot.proportion	Plot exposure proportions rather than counts.
xlim, ylim	Limits for the x and y axis. If NULL(default), the function tries to do something reasonable.
legend.x, legend.y	The x and y co-ordinates to be used to position the legend.

`cex.legend` A numerical value giving the amount by which legend plotting text and symbols should be magnified relative to the default.

... Other arguments passed to `barplot`. If `ylab` is not included, it defaults to a value depending on `plot.proportion`. If `col` is not supplied the function tries to do something reasonable.

Value

An **invisible** list whose first element is a logic value indicating whether the plot is successful. The second element is a numeric vector giving the coordinates of all the bar midpoints drawn, useful for adding to the graph.

Examples

```
file <- system.file("extdata",
                    "synthetic.exposure.csv",
                    package = "ICAMSxtra")
exposure <- ReadExposure(file)
PlotExposureToPdf(exposure, file = file.path(tempdir(), "exposure.pdf"))
```

ReadExposure

Read an exposure matrix from a file

Description

Read an exposure matrix from a file

Usage

```
ReadExposure(file, check.names = FALSE)
```

Arguments

`file` CSV file containing an exposure matrix.

`check.names` Passed to `read.csv`. **IMPORTANT:** If TRUE this will replace the double colon in identifiers of the form `<tumor_type>::<sample_id>` with two periods (i.e. `<tumor_type>.<sample_id>`). If `check.names` is true, generate a warning if double colons were present.

Value

Matrix of exposures.

Examples

```
file <- system.file("extdata",
                    "synthetic.exposure.csv",
                    package = "ICAMSxtra")
exposure <- ReadExposure(file)
```

SortExposure	<i>Sort columns of an exposure matrix from largest to smallest (or vice versa)</i>
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Description

Sort columns of an exposure matrix from largest to smallest (or vice versa)

Usage

```
SortExposure(exposure, decreasing = TRUE)
```

Arguments

exposure	Exposures as a numerical matrix (or data.frame) with signatures in rows and samples in columns. Rownames are taken as the signature names and column names are taken as the sample IDs.
decreasing	If TRUE, sort from largest to smallest.

Value

The original exposure with columns sorted.

Examples

```
file <- system.file("extdata",
                    "synthetic.exposure.csv",
                    package = "ICAMSxtra")
exposure <- ReadExposure(file)
exposure.sorted <- SortExposure(exposure)
```

WriteExposure	<i>Write an exposure matrix to a file</i>
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Description

Write an exposure matrix to a file

Usage

```
WriteExposure(exposure, file)
```

Arguments

exposure	Exposures as a numerical matrix (or data.frame) with signatures in rows and samples in columns. Rownames are taken as the signature names and column names are taken as the sample IDs.
file	File to which to write the exposure matrix (as a CSV file).

Examples

```
file <- system.file("extdata",  
                    "synthetic.exposure.csv",  
                    package = "ICAMSxtra")  
exposure <- ReadExposure(file)  
WriteExposure(exposure, file = file.path(tempdir(), "synthetic.exposure.csv"))
```

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