Package ‘PhitestR’

August 3, 2021

Type Package
Title Analyzing the Heterogeneity of Single-Cell Populations
Version 0.1.0
Description A bioinformatics method developed for analyzing the heterogeneity of single-cell populations. Phitest provides an objective and automatic method to evaluate the performance of clustering and quality of cell clusters.
License GPL-3
Encoding UTF-8
RoxygenNote 7.1.1
Imports parallel, fitdistrplus, Seurat
Suggests knitr, rmarkdown
VignetteBuilder knitr
NeedsCompilation no
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Repository CRAN
Date/Publication 2021-08-03 09:40:02 UTC

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**phitest**

*The generic function for the Phitest method*

**Description**

Phitest for analyzing the heterogeneity of single-cell populations

**Usage**

```
phitest(object, ...)
```

**Arguments**

- `object` An object of single-cell data
- `...` Other parameters to be passed to the function.

**Value**

A list of two elements: `pval` contains the \( P \) values, and `par` contains the estimated parameters.

**Author(s)**

Wei Vivian Li, <vivian.li@rutgers.edu>

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**phitest.matrix**

*Applying the Phitest method with a count matrix*

**Description**

Phitest for analyzing the heterogeneity of single-cell populations

**Usage**

```
## S3 method for class 'matrix'
phitest(object, label, ncores = 1, min.cell = 10)
```

**Arguments**

- `object` A matrix of single-cell UMI counts (rows for genes and columns for cells).
- `label` A character or numeric vector of cluster labels. Length should be the same as cell number and order should match the order in `object`.
- `ncores` Number of cores used for parallel computation.
- `min.cell` An integer specifying a threshold to filter genes. Genes expressed in fewer than `min.cell` cells are filtered out.
phitest.Seurat

Value

A list of two elements: pval contains the \( P \) values, and par contains the estimated parameters.

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Appling the Phitest method with a Seurat object

Description

Phitest for analyzing the heterogeneity of single-cell populations

Usage

```r
## S3 method for class 'Seurat'
phitest(object, ncores = 1, min.cell = 10)
```

Arguments

- `object` A Seurat object.
- `ncores` Number of cores used for parallel computation.
- `min.cell` An integer specifying a threshold to filter genes. Genes expressed in fewer than `min.cell` cells are filtered out.

Value

A list of two elements: pval contains the \( P \) values, and par contains the estimated parameters.

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