Package 'CITMIC'

June 14, 2024

Type Package

Title Estimation of Cell Infiltration Based on Cell Crosstalk

Version 0.1.0

Maintainer Junwei Han <hanjunwei1981@163.com>

Description A systematic biology tool was developed to identify cell infiltration via Individual-
ized Cell-Cell interaction network. 'CITMIC' first constructed a weighted cell interaction net-
work through integrating Cell-target interaction information, molecular func-
tion data from Gene Ontology (GO) database and gene transcriptomic data in specific sam-
ple, and then, it used a network propagation algorithm on the network to identify cell infiltra-
tion for the sample. Ultimately, cell infiltration in the patient dataset was obtained by normaliz-
ing the centrality scores of the cells.

License GPL (>= 2)

Encoding UTF-8

LazyData true

Depends R (>= 2.10)

Imports fastmatch, igraph, parallel, stats

RoxygenNote 7.2.3

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

Author Junwei Han [aut, cre, cph],
Xilong Zhao [aut]

Repository CRAN

Date/Publication 2024-06-14 15:10:11 UTC

Contents

CITMIC	*CITMIC*

Description

The function "CITMIC" is used to identify cell infiltration in tumor microenvironment by calculating intercellular crosstalk.

Usage

```
CITMIC(GEP, damping=0.90)
```

Arguments

GEP   An example gene expression profile

damping   Restart the probability of the random-walk algorithm (default: 0.9).

Value

cell infiltration score

Examples

```
# Obtain the example data
GEP<-GetData_CITMIC("GEP")
# Run the function
lnScore<-CITMIC(GEP, damping=0.90)
```

CITMIC_Data	*An environment variable that includes some example data*

Description

An environment variable that includes some example data. matirx_cell_go_inter:A matrix of Jaccard score between cells and GOBP. matirx_cell_go_jaccard:A matrix consisting of genes shared by cells targets and GOBP. GEP:An example gene expression profile.

Usage

```
CITMIC_Data
```

Format

An environment variable

GetData_CITMIC   *GetData_CITMIC*

Description

Get the example data

Usage

```
GetData_CITMIC(Data)
```

Arguments

Data   A character should be one of "GEP", "matrix_cell_go_inter", "matrix_cell_go_jaccard"

Value

data

Index