

Package ‘goTools’

April 3, 2025

Version 1.81.0

Date 2009-10-23

Title Functions for Gene Ontology database

Depends GO.db

Imports AnnotationDbi, GO.db, graphics, grDevices

Suggests hgu133a.db

biocViews Microarray,GO,Visualization

Author Yee Hwa (Jean) Yang <jean@biostat.ucsf.edu>, Agnes Paquet
<paquetagnes@yahoo.com>

Maintainer Agnes Paquet <paquetagnes@yahoo.com>

Description Wrapper functions for description/comparison of oligo ID
list using Gene Ontology database

License GPL-2

LazyLoad yes

git_url <https://git.bioconductor.org/packages/goTools>

git_branch devel

git_last_commit 6659a1b

git_last_commit_date 2024-10-29

Repository Bioconductor 3.21

Date/Publication 2025-04-03

Contents

| | |
|------------------------------|----------|
| EndNodeList | 2 |
| goTools | 3 |
| Internal functions | 4 |
| probeID | 4 |
| Index | 5 |

EndNodeList

Reference GO nodes list.

Description

The function `EndNodeList` builds the default end node list used in [ontoCompare](#). `CustomEndNodeList` helps you build a list of children nodes starting from a GO id of interest.

Usage

```
EndNodeList()  
CustomEndNodeList(id,rank=1)
```

Arguments

| | |
|-------------------|---|
| <code>id</code> | Valid GO id: "GO:XXXXXXXX". |
| <code>rank</code> | Number of levels of children of the GO DAG under id you want to add to your nodes list. |

Value

`EndNodeList` returns a vector of all GO ids 1 level below MF("GO:0003674"), BP("GO:0008150") and CC("GO:0005575"). MF, BP and CC nodes are included. `CustomEndNodeList` returns a vector of all GO ids children of id, rank levels below it.

Author(s)

Yee Hwa (Jean) Yang, Agnes Paquet

See Also

[ontoCompare](#)

Examples

```
## Examples use the probeID dataset. For description type ? probeID.  
## library(GO.db)  
## EndNodeList()  
## MFendnode <- CustomEndNodeList("GO:0003674", rank=2)  
  
## Example (not run)  
## data(probeID)  
## ontoCompare(affylist, probeType="hgu133a", endnode=MFendnode, goType="MF")
```

goTools

*Wrapper functions***Description**

This functions will allow you to describe and compare sets of oligo ids using Gene Ontology database

Usage

```

ontoCompare(genelist,probeType=c("GO","hgu133a"),
goType="All", endnode, method=c("TGenes", "TIDS", "none"), plot=FALSE,
...)

ontoPlot(objM, names.arg=NULL,beside=TRUE, las=2,legend.text=TRUE, ...)

```

Arguments

| | |
|-------------|--|
| genelist | list of list of valid probe ids. |
| method | method used to evaluate the percentage of oligos for each end-node. 'TGenes' = for each end node, return the number of direct children found / total number of probe ids. (default). This includes oligos which do not have GO annotations. 'TIDS' = for each end node, return the number of direct children found / total number of GO ids describing the list. 'none' = for each end node, return the number of direct children found. |
| probeType | type of input given to the function. Valid probe types include GO ids and any probes ids for which a BioC annotation package providing a mapping to GO is available. ontoCompare is expecting valid probe ids. |
| goType | help sort the data by type. If 'All' (default), all oligos are taken into account. 'BP' restricts information to Biological Process, 'CC' to Cellular Component, and 'MF' to Molecular Function. |
| plot | logical: if 'TRUE', results are output as a graph. |
| endnode | list of GO ids corresponding to end-nodes of interest. |
| beside | Logical. If 'TRUE', the bars of the barplot are portrayed as juxtaposed bars. See ?barplot for more details. |
| las | numeric: if las=2, the axis labels are displayed perpendicular to the axis. See ?par for more details. |
| legend.text | vector of text used to construct a legend for the plot. See ?barplot for more details. |
| objM | results from ontoCompare. |
| names.arg | Labels to use in ontoPlot. |
| ... | extra layout parameters to be passed to ontoPlot. |

Value

Returns the percentage of probes children of nodes contained in endnode. If 'plot' = TRUE, results are plotted as a pie chart or a bargraph.

Author(s)

Yee Hwa (Jean) Yang, Agnes Paquet

Examples

```
# Examples use the probeID dataset. For description type ?probeID.
# Not run

#library(GO.db)
#data(probeID)
#ontoCompare(affylist, probeType="hgu133a", plot=TRUE)
#res <- ontoCompare(operonlist["L1"], probeType="operon", method="TIDS")
#ontoPlot(res, cex=0.7)
```

Internal functions *Internal goTools functions*

Description

Internal goTools functions

Details

These are not to be called by the user.

probeID *List of probe ids from Affymetrix hgu133a chip and Operon Version 2
Human oligos*

Description

The probeID dataset consists of two lists of randomly chosen probe Ids. affylist contains 3 sets of ids from Affymetrix hgu133a. operonlist contains 2 sets of ids from Operon Version 2.

Usage

data(probeID)

Index

- * **datasets**
 - probeID, 4
- * **file**
 - EndNodeList, 2
 - goTools, 3
- * **hplot**
 - goTools, 3
- * **manip**
 - EndNodeList, 2
- * **methods**
 - Internal functions, 4

affylist (probeID), 4

CustomEndNodeList (EndNodeList), 2

EndNodeList, 2

getGOID (Internal functions), 4

getOntology (Internal functions), 4

goChildren (Internal functions), 4

goParents (Internal functions), 4

goTools, 3

Internal functions, 4

isEndNode (Internal functions), 4

ontoCompare, 2

ontoCompare (goTools), 3

ontoCompare.main (Internal functions), 4

ontoPlot (goTools), 3

operonlist (probeID), 4

parentsVectWrapper (Internal functions),
4

probeID, 4