

# Package ‘bioCancer’

October 14, 2021

**Title** Interactive Multi-Omics Cancers Data Visualization and Analysis

**Version** 1.20.02

**Date** 2021-06-28

**Description** bioCancer is a Shiny App to visualize and analyse interactively Multi-Assays of Cancer Genomic Data.

**Depends** R (>= 3.6.0), radiant.data (>= 0.9.1), cgdsr(>= 1.2.6), XML(>= 3.98)

**Imports** DT (>= 0.3), dplyr (>= 0.7.2), shiny (>= 1.0.5), AlgDesign (>= 1.1.7.3), import (>= 1.1.0), methods, AnnotationDbi, shinythemes, Biobase, geNetClassifier, org.Hs.eg.db, org.Bt.eg.db, DOSE, clusterProfiler, reactome.db, ReactomePA, DiagrammeR(<= 1.01), visNetwork, htmlwidgets, plyr, tibble, GO.db

**Suggests** BiocStyle, prettydoc, rmarkdown, knitr, testthat (>= 0.10.0)

**VignetteBuilder** knitr

**URL** <http://kmezhoud.github.io/bioCancer>

**BugReports** <https://github.com/kmezhoud/bioCancer/issues>

**License** AGPL-3 | file LICENSE

**LazyData** true

**biocViews** GUI, DataRepresentation, Network, MultipleComparison, Pathways, Reactome, Visualization, GeneExpression, GeneTarget

**RoxygenNote** 7.1.1

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AnnotationFuncs-package

*Annotation translation functions*

---

## Description

Package: AnnotationFuncs  
Type: Package  
Version: 1.3.0  
Date: 2011-06-10  
License: GPL-2  
LazyLoad: yes

## Details

Functions for handling translations between different identifiers using the Biocore Data Team data-packages (e.g. org.Bt.eg.db). Primary functions are [translate](#) for translating and [getOrthologs](#) for efficient lookup of homologues using the Inparanoid databases. Other functions include functions for selecting Refseqs or Gene Ontologies (GO).

## Author(s)

Stefan McKinnon Edwards <[stefan.hoj-edwards@agrsci.dk](mailto:stefan.hoj-edwards@agrsci.dk)>

## References

<http://www.iysik.com/index.php?page=annotation-functions>

## See Also

[translate](#), [getOrthologs](#)

**Examples**

```
library(org.Bt.eg.db)
gene.symbols <- c('DRBP1', 'SERPINA1', 'FAKE', 'BLABLA')
# Find entrez identifiers of these genes.
eg <- translate(gene.symbols, org.Bt.egSYMBOL2EG)
# Note that not all symbols were translated.

# Go directly to Refseq identifiers.
refseq <- translate(gene.symbols, from=org.Bt.egSYMBOL2EG, to=org.Bt.egREFSEQ)
# Pick the proteins:
pickRefSeq(refseq, priorities=c('NP', 'XP'), reduce='all')
```

---

<code>.dbEscapeString</code>	<i>Private Escape string</i>
------------------------------	------------------------------

---

**Description**

Does not escape strings, but raises an error if any character expect normal letters and underscores are found in the string.

**Usage**

```
.dbEscapeString(str, raise.error = TRUE)
```

**Arguments**

<code>str</code>	String to test
<code>raise.error</code>	Logical, whether to raise an error or not.

**Value**

Invisible logical

---

<code>.getTableNames</code>	<i>Gets the table name from the INPARANOID style genus names.</i>
-----------------------------	---

---

**Description**

Gets the table name from the INPARANOID style genus names.

**Usage**

```
.getTableNames(genus)
```

**Arguments**

<code>genus</code>	5 character INPARANOID genus name, such as "BOSTA", "HOMSA" or "MUSMU".
--------------------	---

**Value**

Table name for genus.

**Author(s)**

Stefan McKinnon Edwards <stefanm.edwards@agrsci.dk>

**References**

<http://www.bioconductor.org/packages/release/bioc/html/AnnotationDbi.html>

---

`.pickRef`

*Secret function that does the magic for pickRefSeq.*

---

**Description**

Do not use it, use [pickRefSeq](#)!

**Usage**

```
.pickRef(l, priorities, reduce = c("all", "first", "last"))
```

**Arguments**

<code>l</code>	List.
<code>priorities</code>	How to prioritize.
<code>reduce</code>	How to reduce.

**Value**

List.

**Note**

Hey, you found a secret function! Keep it that way!

**Author(s)**

Stefan McKinnon Edwards <stefan.hoj-edwards@agrsci.dk>

**See Also**

[pickRefSeq](#)

attriColorGene      *Attribute Color to Gene*

---

**Description**

Attribute Color to Gene

**Usage**

```
attriColorGene(df)
```

**Arguments**

df                      data frame with mRNA or CNA or mutation frequency or methylation (numeric).

**Value**

A list colors for every gene

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
ProfData <- getProfileData(cgds,
  geneList, "gbm_tcga_pub_mrna", "gbm_tcga_pub_all")
rownames(ProfData) <- NULL
clr <- attriColorGene(ProfData)

## End(Not run)
```

---

attriColorValue      *Attribute Color to Value*

---

**Description**

Attribute Color to Value

**Usage**

```
attriColorValue(Value, df, colors=c(a,b,c),feet)
```

**Arguments**

Value	integer
df	data frame with numeric values
colors	a vector of 5 colors
feet	the interval between two successive colors in the palette (0.1)

**Value**

Hex Color Code

**Examples**

```

cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
ProfData <- getProfileData(cgds,
  geneList, "gbm_tcga_pub_mrna", "gbm_tcga_pub_all")
rownames(ProfData) <- NULL
clrRef <- attriColorValue(1.2,
  ProfData,
  colors = c("blue3", "white", "red"),
  feet=10)

## End(Not run)

```

---

attriColorVector      *Attribute color to a vector of numeric values*

---

**Description**

Attribute color to a vector of numeric values

**Usage**

```
attriColorVector(Value, vector, colors=c(a,b,c),feet)
```

**Arguments**

Value	numeric
vector	A vector of numeric data
colors	3 colors
feet	An interval between two numeric value needed to change the color

**Value**

A vector of colors

## Examples

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
ProfData <- getProfileData(cgds,
  geneList, "gbm_tcga_pub_mrna", "gbm_tcga_pub_all")
rownames(ProfData) <- NULL
clrVec <- attriColorVector(1.2,
  ProfData[1,],
  colors = c("blue", "white", "red"),
  feet=1)

## End(Not run)
```

---

attriShape2Gene

*Attribute shape to nodes*

---

## Description

Attribute shape to nodes

## Usage

```
attriShape2Gene(gene, genelist)
```

## Arguments

gene	Gene symbol
genelist	Gene list

## Value

A character "BRCA1[shape = 'circle', "

## Examples

```
how <- "runManually"
## Not run:
GeneList <- whichGeneList("73")
attriShape2Gene("P53", GeneList)
attriShape2Gene("GML", GeneList)

## End(Not run)
```



---

attriShape2Node	<i>Attributes shape to Nodes</i>
-----------------	----------------------------------

---

**Description**

Attributes shape to Nodes

**Usage**

```
attriShape2Node(gene, genelist)
```

**Arguments**

gene	symbol "TP53"
genelist	a vector of gene symbol

**Value**

A data frame with edges attributes

**Examples**

```
GeneList <- c("DKK3" , "NBN" , "MY06" , "TP53" , "PML" , "IFI16" , "BRCA1")  
NodeShape <- attriShape2Gene("DKK3", GeneList)
```

---

bioCancer	<i>Launch bioCancer with default browser</i>
-----------	--

---

**Description**

The main function to run the app

**Usage**

```
bioCancer()
```

**Value**

web page of bioCancer Shiny App

**Examples**

```
ShinyApp <- 1  
## Not run:  
bioCancer()  
  
## End(Not run)
```

---

checkDimensions	<i>Check wich Cases and genetic profiles are available for every seleted study</i>
-----------------	--

---

**Description**

Check wich Cases and genetic profiles are available for every seleted study

**Usage**

```
checkDimensions(panel,StudyID)
```

**Arguments**

panel	panel can take to strings 'Circomics' or 'Networking'
StudyID	Study reference using cgdsr index

**Value**

A data frame with two column (Cases, Genetic profiles). Every row has a dimension (CNA, mRNA...). The data frame is filled with yes/no response.

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
df <- checkDimensions(panel='Networking', StudyID= "gbm_tcga_pub")

## End(Not run)
```

---

coffeewheel	<i>This is an htmlwidgets-based visualization tool for hierarchical data. It is zoomable, meaning that you can interact with the hierarchy and zoom in/out accordingly.</i>
-------------	---

---

**Description**

This is an htmlwidgets-based visualization tool for hierarchical data. It is zoomable, meaning that you can interact with the hierarchy and zoom in/out accordingly.

**Usage**

```
coffeewheel(treeData, width=600, height=600, main="", partitionAttribute="value")
```

**Arguments**

treeData	A hierarchical tree data as in example
width	600
height	600
main	Title
partitionAttribute	"value"

**Value**

A circular layout with genetic profile.

**Examples**

```
How <- "runManually"  
## Not run:  
  coffeewheel(treeData = sampleWheelData)  
  
## End(Not run)
```

---

coffeewheelOutput      *Widget output function for use in Shiny*

---

**Description**

Widget output function for use in Shiny

**Usage**

```
coffeewheelOutput(outputId, width=700, height=700)
```

**Arguments**

outputId	id
width	700
height	700

**Value**

A circular layout with genetic profile in Shiny App.

**Examples**

```
How <- "runManually"  
## Not run:  
  coffeewheel(treeData = sampleWheelData)  
  
## End(Not run)
```

---

displayTable	<i>Display dataframe in table using DT package</i>
--------------	--

---

**Description**

Display dataframe in table using DT package

**Usage**

```
displayTable(df)
```

**Arguments**

df                    a dataframe

**Value**

A table

**Examples**

```
session <- NULL
cgds <- CGDS("http://www.cbioportal.org/")
Studies<- getCancerStudies(cgds)
## Not run:
displayTable(Studies)

## End(Not run)
```

---

Edges_Diseases_obj	<i>get Edges dataframe for Gene/Disease association from geNetClassifier</i>
--------------------	--

---

**Description**

get Edges dataframe for Gene/Disease association from geNetClassifier

**Usage**

```
Edges_Diseases_obj(genesclassdetails)
```

**Arguments**

genesclassdetails  
                  a dataframe from geNetClassifier

**Value**

A data frame with edges attributes

**Examples**

```
GenesClassDetails <- structure(list(Genes = c("FANCF", "MLH1", "MSH2", "ATR", "PARP1",  
"CHEK2", "RAD51"), ranking = c(1L, 1L, 1L, 2L, 3L, 1L, 2L), class = c("brca_tcga",  
"gbm_tcga", "lihc_tcga", "lihc_tcga", "lihc_tcga", "lusc_tcga",  
"lusc_tcga"), postProb = c(1, 0.99, 1, 0.99, 0.99, 1,  
0.98), exprsMeanDiff = c(180, 256, -373, -268,  
-1482, 258, 143), exprsUpDw = c("UP", "UP", "DOWN",  
"DOWN", "DOWN", "UP", "UP")), .Names = c("Genes", "ranking",  
"class", "postProb", "exprsMeanDiff", "exprsUpDw"),  
class = "data.frame", row.names = c(NA,-7L))  
  
Ed_Diseases_obj <- Edges_Diseases_obj(genesclassdetails=GenesClassDetails)
```

---

epiGenomics

*Default dataset of bioCancer*

---

**Description**

Default dataset of bioCancer

**Usage**

```
epiGenomics
```

**Format**

An object of class `data.frame` with 48 rows and 7 columns.

**Author(s)**

Karim Mezhoud <kmezhoud@gmail.com>

---

`findPhantom`*Check if PhantomJS is installed. Similar to webshot*

---

**Description**

Check if PhantomJS is installed. Similar to webshot

**Usage**

```
findPhantom()
```

**Value**

Logic object

**Examples**

```
How <- "runManually"  
## Not run:  
findPhantom()  
  
## End(Not run)
```

---

`getEvidenceCodes`*Returns GO evidence codes.*

---

**Description**

Returns GO evidence codes.

**Usage**

```
getEvidenceCodes()
```

**Value**

Matrix of two columns, first column with codes, second column with description of codes.

**Author(s)**

Stefan McKinnon Edwards <stefan.hoj-edwards@agrsci.dk>

**References**

?org.Bt.egGO

**See Also**

[pickGO](#)

**Examples**

```
getEvidenceCodes()
```

---

<code>getFreqMutData</code>	<i>get mutation frequency</i>
-----------------------------	-------------------------------

---

**Description**

get mutation frequency

**Usage**

```
getFreqMutData(list, geneListLabel)
```

**Arguments**

`list`                    a list of data frame with mutation data. Each data frame is for one study  
`geneListLabel`        file name of geneList examples: "73"

**Value**

a data frame with mutation frequency. gene is in rows and study is in column

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")  
## Not run:  
geneList <- whichGeneList("73")  
r_data <- new.env()  
MutData <- getMutationData(cgds, "gbm_tcga_pub_all",  
  "gbm_tcga_pub_mutations", geneList )  
FreqMut <- getFreqMutData(list(ls1=MutData, ls2=MutData), "73")  
  
## End(Not run)
```

---

`getGenesClassification`*get genes classification*

---

**Description**

get genes classification

**Usage**

```
getGenesClassification(checked_Studies, GeneList,  
  samplesize, threshold, listGenProfs, listCases)
```

**Arguments**

<code>checked_Studies</code>	checked studies
<code>GeneList</code>	gene list
<code>samplesize</code>	sample size
<code>threshold</code>	p-value threshold
<code>listGenProfs</code>	list of genetic profiles
<code>listCases</code>	list of cases

**Value**

A table with genes classed by study

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")  
listStudies <- cgdsr::getCancerStudies(cgds)  
## Not run:  
checked_Studies <- listStudies[3:5]  
listCases <- getList_Cases(listStudies[1:3])  
listGenProfs <- getList_GenProfs(listStudies[1:3])  
GeneList <- c('P53', 'IFI16', 'BRCA1')  
samplesize <- 50  
threshold <- 0.95  
table <- getGenesClassification(checked_Studies, GeneList,  
  samplesize, threshold, listGenProfs, listCases)  
  
## End(Not run)
```



---

getListProfData	<i>get list of data frame with profiles data (CNA,mRNA, Methylation, Mutation...)</i>
-----------------	---

---

### Description

get list of data frame with profiles data (CNA,mRNA, Methylation, Mutation...)

### Usage

```
getListProfData(panel, geneListLabel)
```

### Arguments

panel	Panel name (string) in which Studies are selected. There are two panels ("Circomics" or "Networking")
geneListLabel	The label of GeneList. There are three cases: "Genes" user gene list, "Reactome_GeneList" GeneList plus genes from reactomeFI "file name" from Examples

### Value

A LIST of profiles data (CNA, mRNA, Methylation, Mutation, miRNA, RPPA). Each dimension content a list of studies.

### Examples

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
r_data <- new.env()
MutData <- cgdsr::getMutationData(cgds,"gbm_tcga_pub_all",
  "gbm_tcga_pub_mutations", geneList )
FreqMut <- getFreqMutData(list(ls1=MutData, ls2=MutData), "73")
input <- NULL
input[['StudiesIDCircos']] <- c("luad_tcga_pub","blca_tcga_pub")

ListProfData <- getListProfData(panel= "Circomics","73")

## End(Not run)
```

---

getList_Cases	<i>get list of cases of each selected study in Classifier panel</i>
---------------	---

---

**Description**

get list of cases of each selected study in Classifier panel

**Usage**

```
getList_Cases(checked_Studies)
```

**Arguments**

```
checked_Studies  
checked studies
```

**Value**

listes of cases

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")  
listStudies <- cgdsr::getCancerStudies(cgds)  
## Not run:  
listCases <- getList_Cases(listStudies[1:3])  
  
## End(Not run)
```

---

getList_GenProfs	<i>get list of genetic profiles of each selected study in Classifier panel</i>
------------------	--

---

**Description**

get list of genetic profiles of each selected study in Classifier panel

**Usage**

```
getList_GenProfs(checked_Studies)
```

**Arguments**

```
checked_Studies  
checked studies
```

**Value**

listes of genetics profiles

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")
listStudies <- cgdsr::getCancerStudies(cgds)
## Not run:
listGenProfs <- getList_GenProfs(listStudies[1:3])

## End(Not run)
```

---

getMegaProfData	<i>search and get genetic profiles (CNA,mRNA, Methylation, Mutation...) of gene list upper than 500</i>
-----------------	---

---

**Description**

search and get genetic profiles (CNA,mRNA, Methylation, Mutation...) of gene list upper than 500

**Usage**

```
getMegaProfData(MegaGeneList, GenProf, Case, Class)
```

**Arguments**

MegaGeneList	A list of genes upper than 500
GenProf	genetic profile reference
Case	Case reference
Class	indicates the panel ProfData or Mutdata

**Details**

See <https://github.com/kmezhoud/bioCancer/wiki>

**Value**

A data frame with Genetic profile

**Examples**

```

GeneList <- c("ALK", "JAK3", "SHC3", "TP53", "MYC", "PARP")
## Not run:
cgds <- cgdsr::CGDS("http://www.cbioportal.org/")
listCase_gbm_tcga_pub <- cgdsr::getCaseLists(cgds, "gbm_tcga_pub")[,1]
listGenProf_gbm_tcga_pub <- cgdsr::getGeneticProfiles(cgds, "gbm_tcga_pub")[,1]

ProfData_Mut <- grepRef("gbm_tcga_pub_all", listCase_gbm_tcga_pub,
  "gbm_tcga_pub_mutations", listGenProf_gbm_tcga_pub, GeneList, Mut=1)

## End(Not run)

```

---

getOrthologs

*Performs quicker lookup for orthologs in homologue data packages*


---

**Description**

Using the INPARANOID data packages such as `hom.Hs.inp.db` is very, very slow and can take up to 11 min (on this particular developers workstation). This function introduces a new method that can do it in just 20 seconds (on the developers workstation). In addition, it includes options for translating between different identifiers both before and after the mapping.

**Usage**

```

getOrthologs(
  values,
  mapping,
  genus,
  threshold = 1,
  pre.from = NULL,
  pre.to = NULL,
  post.from = NULL,
  post.to = NULL,
  ...
)

```

**Arguments**

values	Vector, coerced to character vector, of values needed mapping by homology.
mapping	Homology mapping object, such as <code>hom.Hs.inpBOSTA</code> or <code>revmap(hom.Hs.inpBOSTA)</code> .
genus	Character vector. 5 character INPARANOID style genus name of the mapping object, e.g. 'BOSTA' for both <code>hom.Hs.inpBOSTA</code> and <code>revmap(hom.Hs.inpBOSTA)</code> .
threshold	Numeric value between 0 and 1. Only clustered homologues with a pairwise score above the threshold is included. The native implementation has this set to 1.

pre.from	Mapping object if values needs translation before mapping. E.g. values are entrez and hom.Hs.inpBOSTA requires ENSEMBLPROT, hom.Hs.inpAPIME requires Refseq (?). Arguments from and to are just like in <a href="#">translate</a> .
pre.to	Second part of translation before mapping.
post.from	Translate the result from homology mapping to a desired id; just like in <a href="#">translate</a> .
post.to	Second part of translation after mapping.
...	Additional arguments sent to <a href="#">translate</a> .

**Value**

List. Names of list corresponds to values, except those that could not be mapped nor translated. Entries are character vectors.

**Author(s)**

Stefan McKinnon Edwards <stefan.hoj-edwards@agrsci.dk>

**References**

- ?hom.Hs.inp.db - <http://inparanoid.sbc.su.se/>
- Berglund, A.C., Sjolund, E., Ostlund, G., Sonnhammer, E.L.L. (2008) InParanoid 6: eukaryotic ortholog clusters with inparalogs *Nucleic Acids Res.* **36**:D263–266
- O'Brien, K.P., Maida, R., Sonnhammer, E.L.L (2005) Inparanoid: A Comprehensive Database of Eukaryotic Orthologs *NAR* **33**:D476–D480
- Remm, M., Storm, C.E.V, Sonnhammer, E.L.L (2001) Automatic clustering of orthologs and inparalogs from pairwise species comparisons *J. Mol. Biol.* **314**:1041–1052

**See Also**

[translate](#), [.getTableNames](#), [mapLists](#)

**Examples**

```
tmp <-1
```

---

```
getSequenced_SampleSize
```

*get samples size of sequenced genes*

---

**Description**

get samples size of sequenced genes

**Usage**

```
getSequenced_SampleSize(StudyID)
```

**Arguments**

StudyID                    Study reference using cgdsr index

**Value**

dataframe with sample size for each selected study.

**Examples**

```
## Not run:
sampleSize <- getSequenced_SampleSize(input$StudiesIDCircos)

## End(Not run)
```

---

grepRef                    *search and get genetic profiles (CNA,mRNA, Methylation, Mutation...)*

---

**Description**

search and get genetic profiles (CNA,mRNA, Methylation, Mutation...)

**Usage**

```
grepRef(regex1, listRef1, regex2, listRef2, GeneList, Mut)
```

**Arguments**

regex1                    Case id (cancer\_study\_id\_[mutations, cna, methylation, mrna ]).

listRef1                    A list of cases for one study.

regex2                    Genetic Profile id (cancer\_study\_id\_[mutations, cna, methylation, mrna ]).

listRef2                    A list of Genetic Profiles for one study.

GeneList                    A list of genes

Mut                        Condition to set if the genetic profile is mutation or not (0,1)

**Details**

See <https://github.com/kmezhoud/bioCancer/wiki>

**Value**

A data frame with Genetic profile

## Examples

```
GeneList <- c("ALK", "JAK3", "SHC3", "TP53", "MYC", "PARP")
## Not run:
cgds <- cgdsr::CGDS("http://www.cbioportal.org/")
listCase_gbm_tcga_pub <- cgdsr::getCaseLists(cgds, "gbm_tcga_pub")[,1]
listGenProf_gbm_tcga_pub <- cgdsr::getGeneticProfiles(cgds, "gbm_tcga_pub")[,1]

ProfData_Mut <- grepRef("gbm_tcga_pub_all", listCase_gbm_tcga_pub,
  "gbm_tcga_pub_mutations", listGenProf_gbm_tcga_pub, GeneList, Mut=1)

## End(Not run)
```

---

mapLists

*Replaces contents of list A with elements of list B*

---

## Description

Combines two lists, A and B, such that names(A) are preserved, mapping to the values of B, using names(B) as look up. Ie. replaces values in A with values in B, using names(B) as look up for values in A. Once more? See examples. *NB!* None-mapped entries are returned as NA, but can be removed using [removeNAs](#).

## Usage

```
mapLists(A, B, removeNAs = TRUE)
```

## Arguments

A	List, elements are coerced to character for mapping to B.
B	List.
removeNAs	Boolean, whether to remove the NAs that occur because an element was not found in B.

## Value

List.

## Author(s)

Stefan McKinnon Edwards <stefan.hoj-edwards@agrsci.dk>

## See Also

[removeNAs](#)

### Examples

```
A <- list('a1'='alpha', 'a2'='beta', 'a3'=c('gamma', 'delta'))
B <- list('alpha'='b1', 'gamma'=c('b2', 'b3'), 'delta'='b4')
mapLists(A, B)
```

---

metabologram

*Circular plot of hierarchital data of genetic profile.*

---

### Description

Circular plot of hierarchital data of genetic profile.

### Usage

```
metabologram(treeData, width=600, height=600, main="", showLegend=FALSE,
              legendBreaks=NULL,
              legendColors=NULL,
              fontSize=12,
              legendText="Legend")
```

### Arguments

treeData	A hierarchical tree data as in example
width	600
height	600
main	Title
showLegend	FALSE
legendBreaks	NULL
legendColors	NULL
fontSize	12
legendText	Legend

### Value

A circular layout with genetic profile.

### See Also

<https://github.com/armish/metabologram>



## Examples

```
How <- "runManually"
## Not run:
metabologram(treeData = sampleWheelData, width=600,
             height=600, main="title", showLegend = TRUE, fontSize = 10,
             legendBreaks=c("NA","Min","Negative", "0", "Positive", "Max"),
             legendColors=c("black","blue","cyan","white","yellow","red") ,
             legendText="Legend")

## End(Not run)
```

---

metabologramOutput	<i>Widget output function for use in Shiny</i>
--------------------	--

---

## Description

Widget output function for use in Shiny

## Usage

```
metabologramOutput(outputId, width = 600, height = 500)
```

## Arguments

outputId	id
width	600
height	600

## Value

A circular plot with genetic profile in Shiny App.

## Examples

```
## Not run:
library(bioCancer)
bioCancer::metabologram(treeData = sampleMetabologramData)

## End(Not run)
```

---

Mutation\_obj                      *Attribute mutation frequency to nodes*

---

**Description**

Attribute mutation frequency to nodes

**Usage**

```
Mutation_obj(list,FreqMutThreshold, geneListLabel)
```

**Arguments**

`list`                      A list of data frame with mutation data. Each data frame to study

`FreqMutThreshold`                      threshold Rate of cases (patients) having mutation (0-1).

`geneListLabel`                      file name of geneList examples: "73"

**Value**

A dat frame with mutation frequency. Ech column corresponds to a study.

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
MutData <- getMutationData(cgds,"gbm_tcga_pub_all",
"gbm_tcga_pub_mutations", geneList )
listMutData <- list(ls1=MutData, ls2=MutData)
FreqMutThreshold <- 10
r_data <- new.env()
MutObj <- Mutation_obj(listMutData, 10, "73")

## End(Not run)
```

---

Node\_df\_FreqIn                      *Attributes size to Nodes depending on number of interaction*

---

**Description**

Attributes size to Nodes depending on number of interaction

**Usage**

```
Node_df_FreqIn(genelist, freqIn)
```

**Arguments**

genelist            a vector of genes  
freqIn             dataframe with Node interaction frequencies

**Value**

A data frame with nodes size attributes

**Examples**

```
Node_df_FreqIn
## Not run:
r_data <- new.env()
r_data[["FreqIn"]] <- structure(list(Genes = c("ATM", "ATR", "BRCA1", "BRCA2", "CHEK1",
"CHEK2", "FANCF", "MDC1", "RAD51"), FreqSum = c(0.04, 0.05, 0.05,
0.03, 0.05, 0.04, 0.03, 0.03, 0.02)), .Names = c("Genes", "FreqSum"),
class = "data.frame", row.names = c(NA, -9L))
GeneList <- whichGeneList("DNA_damage_Response")
node_df <- Node_df_FreqIn(GeneList, r_data$FreqIn)

## End(Not run)
```

---

Node\_Diseases\_obj        *Attributes color and shape to Nodes of Diseases*

---

**Description**

Attributes color and shape to Nodes of Diseases

**Usage**

```
Node_Diseases_obj(genesclassdetails)
```

**Arguments**

genesclassdetails  
                  a dataframe from geNetClassifier function

**Value**

A data frame with nodes Shapes and colors

**Examples**

```

GenesClassDetails <- structure(list(Genes = c("FANCF", "MLH1", "MSH2", "ATR", "PARP1",
"CHEK2", "RAD51"), ranking = c(1L, 1L, 1L, 2L, 3L, 1L, 2L), class = c("brca_tcga",
"gbm_tcga", "lihc_tcga", "lihc_tcga", "lihc_tcga", "lusc_tcga",
"lusc_tcga"), postProb = c(1, 0.99, 1, 0.99, 0.99, 1,
0.98), exprsMeanDiff = c(180, 256, -373, -268,
-1482, 258, 143), exprsUpDw = c("UP", "UP", "DOWN",
"DOWN", "DOWN", "UP", "UP")), .Names = c("Genes", "ranking",
"class", "postProb", "exprsMeanDiff", "exprsUpDw"),
class = "data.frame", row.names = c(NA,-7L))
Node_Diseases_df <- Node_Diseases_obj(genesclassdetails= GenesClassDetails)

```

---

Node\_obj\_CNA\_ProfData *Attribute CNA data to node border*

---

**Description**

Attribute CNA data to node border

**Usage**

```
Node_obj_CNA_ProfData(list)
```

**Arguments**

**list**                    A list of data frame with CNA data. Each data frame corresponds to a study.

**Value**

A data frame with node border attributes

**Examples**

```

cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
GeneList <- whichGeneList("DNA_damage_Response")
ProfDataCNA <- cgdsr::getProfileData(cgds, GeneList, "brca_tcga_pub_gistic", "brca_tcga_pub_all")
ListProfDataCNA <- list(ls1=ProfDataCNA, ls2=ProfDataCNA)
nodeObj <- Node_obj_CNA_ProfData(ListProfDataCNA)

## End(Not run)

```

---

Node\_obj\_FreqIn      *Attribute interaction frequency to node size*

---

**Description**

Attribute interaction frequency to node size

**Usage**

```
Node_obj_FreqIn(geneList)
```

**Arguments**

geneList      A list of gene symbol

**Value**

A data frame with node attributes

**Examples**

```
r_data <- new.env()
r_data[["FreqIn"]] <- structure(list(Genes = c("ATM", "ATR", "BRCA1", "BRCA2", "CHEK1",
"CHEK2", "FANCF", "MDC1", "RAD51"), FreqSum = c(0.04, 0.05, 0.05,
0.03, 0.05, 0.04, 0.03, 0.03, 0.02)), .Names = c("Genes", "FreqSum"),
class = "data.frame", row.names = c(NA, -9L))
## Not run:
GeneList <- whichGeneList("DNA_damage_Response")
nodeObj <- Node_obj_FreqIn(GeneList)

## End(Not run)
```

---

Node\_obj\_Met\_ProfData      *Attribute gene Methylation to Nodes*

---

**Description**

Attribute gene Methylation to Nodes

**Usage**

```
Node_obj_Met_ProfData(list, type, threshold)
```

**Arguments**

list            a list of data frame with methylation data  
 type            HM450 or HM27  
 threshold      the Rate cases (patients) that have a silencing genes by methylation

**Value**

a data frame with node shape attributes

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
GeneList <- whichGeneList("DNA_damage_Response")
ProfDataMET <- cgdsr::getProfileData(cgds, GeneList, "gbm_tcga_pub_methylation", "gbm_tcga_pub_all")
ListProfDataMET <- list(ls1=ProfDataMET, ls2=ProfDataMET)
nodeObj <- Node_obj_Met_ProfData(ListProfDataMET, "HM450", 0.1)

## End(Not run)
```

---

Node\_obj\_mRNA\_Classifier

*Attribute genes expression to color nodes*

---

**Description**

Attribute genes expression to color nodes

**Usage**

```
Node_obj_mRNA_Classifier(geneList, genesclassdetails)
```

**Arguments**

geneList        A gene list.  
 genesclassdetails  
                  A dataframe with genes classes and genes expression.

**Value**

A data frame with node color attributes

**Examples**

```

r_data <- new.env()
input <- NULL

r_data[["FreqIn"]] <- structure(list(Genes = c("ATM", "ATR", "BRCA1", "BRCA2", "CHEK1",
"CHEK2", "FANCF", "MDC1", "RAD51"), FreqSum = c(0.04, 0.05, 0.05,
0.03, 0.05, 0.04, 0.03, 0.03, 0.02)), .Names = c("Genes", "FreqSum"),
class = "data.frame", row.names = c(NA, -9L))

GenesClassDetails <- structure(list(Genes = c("FANCF", "MLH1", "MSH2", "ATR", "PARP1",
"CHEK2", "RAD51"), ranking = c(1L, 1L, 1L, 2L, 3L, 1L, 2L), class = c("brca_tcga",
"gbm_tcga", "lihc_tcga", "lihc_tcga", "lihc_tcga", "lusc_tcga",
"lusc_tcga"), postProb = c(1, 0.99, 1, 0.99, 0.99, 1,
0.98), exprsMeanDiff = c(180, 256, -373, -268,
-1482, 258, 143), exprsUpDw = c("UP", "UP", "DOWN",
"DOWN", "DOWN", "UP", "UP")), .Names = c("Genes", "ranking",
"class", "postProb", "exprsMeanDiff", "exprsUpDw"),
class = "data.frame", row.names = c(NA, -7L))
## Not run:
GeneList <- whichGeneList("DNA_damage_Response")
nodeObj <- Node_obj_mRNA_Classifier(GeneList, GenesClassDetails)

## End(Not run)

```

---

pickGO

*Cleans up result from org.Xx.egGO and returns specific GO identifiers*


---

**Description**

Cleans up result from org.Xx.egGO and returns GO identifier for either biological process (BP), cellular component (CC), or molecular function (MF). Can be used on list of GOs from [translate](#), or a single list of GOs from an annotation package. May reduce list, if the (sub)list does not contain the chosen class!

**Usage**

```
pickGO(l, evidence = NA, category = NA)
```

**Arguments**

l	Character vector, or list of, og GO identifiers.
evidence	Character vector, filters on which kind of evidence to return; for a larger list see <a href="#">getEvidenceCodes</a> . \* Evidence codes may be: c('IMP', 'IGI', 'IPI', 'ISS', 'IDA', 'IEP', 'IEA', '\* Leave as NA to ignore filtering on this part.
category	Character vector, filters on which ontology to return: biological process (BP), cellular component (CC), or molecular function (MF). \* Leave as NA to ignore filtering on this part.

**Value**

List with only the picked elements.

**Author(s)**

Stefan McKinnon Edwards <stefan.hoj-edwards@agrsci.dk>

**See Also**

[pickRefSeq](#), [getEvidenceCodes](#), [translate](#)

**Examples**

```
library(org.Bt.eg.db)
genes <- c(280705, 280706, 100327208)
GO <- translate(genes, org.Bt.egGO)
# Get all biological processes:
pickGO(GO, category='BP')
# Get all ontologies with experimental evidence:
pickGO(GO, evidence=c('IMP', 'IGI', 'IPI', 'ISS', 'IDA', 'IEP', 'IEA'))
```

---

pickRefSeq

*Picks a prioritised RefSeq identifier from a list of identifiers*

---

**Description**

When translating to RefSeq, typically multiple identifiers are returned, referring to different types of products, such as genomic molecule, mature mRNA or the protein, and they can be predicted, properties that can be read from the prefix (<http://www.ncbi.nlm.nih.gov/refseq/key.html>). E.g. "XM\_" is predicted mRNA and "NP\_" is a protein. Run ?org.Bt.egREFSEQ.

**Usage**

```
pickRefSeq(
  l,
  priorities = c("NP", "XP", "NM", "XM"),
  reduce = c("all", "first", "last")
)
```

**Arguments**

l	Vector or list of RefSeqs accessions to pick from. If list given, applies the prioritisation to each element in the list.
priorities	Character vector of prioritised prefixes to pick by. Eg. c("NP", "NM") returns RefSeqs starting 'NP', and if none found, those starting 'NM'. If no RefSeqs are found according to the priorities, Null is returned, unless the last element in priorities is '*'. Uses grepl, so see these for pattern matching. Default: c('NP', 'XP', 'NM', 'XM')



reduce Reducing method, either return all annotations (one-to-many relation) or the first or last found annotation. The reducing step is applied after translating to the goal: all: returns all annotations first or last: choose first or last of arbitrarily ordered list.

**Value**

If vector given, returns vector. If list given, returns list without element where nothing could be picked.

**Author(s)**

Stefan McKinnon Edwards <stefan.hoj-edwards@agrsci.dk>

**Examples**

```
library(org.Bt.eg.db)
symbols <- c("SERPINA1", "KERA", "CD5")
refseq <- translate(symbols, from=org.Bt.egSYMBOL2EG, to=org.Bt.egREFSEQ)
mRNA <- pickRefSeq(refseq, priorities=c('NM', 'XM'))
proteins <- pickRefSeq(refseq, priorities=c('NP', 'XP'))
```

---

removeNAs

*Removes entries equal NA from list or vector*

---

**Description**

Removes entries equal NA, but not mixed entries containing, amongst others, NA. Good for use after [mapLists](#) that might return entries equal NA.

**Usage**

```
removeNAs(l)
```

**Arguments**

l Vector or list.

**Author(s)**

Stefan McKinnon Edwards <stefan.hoj-edwards@agrsci.dk>

**Examples**

```
removeNAs(list('a'=NA, 'b'=c(NA, 'B'), 'c'='C'))
```

---

renderCoffeewheel      *Widget render function for use in Shiny*

---

**Description**

Widget render function for use in Shiny

**Usage**

```
renderCoffeewheel(expr, env = parent.frame(), quoted = FALSE)
```

**Arguments**

expr	id
env	parent.frame()
quoted	FALSE

**Value**

A circular layout with genetic profile in Shiny App.

**Examples**

```
How <- "runManually"  
## Not run:  
coffeewheel(treeData = sampleWheelData)  
  
## End(Not run)
```

---

renderMetabologram      *Widget render function for use in Shiny*

---

**Description**

Widget render function for use in Shiny

**Usage**

```
renderMetabologram(expr, env= parent.frame(), quoted = FALSE)
```

**Arguments**

expr	expression
env	parent.frame()
quoted	FALSE

**Value**

A circular plot with genetic profile in Shiny App.

**Examples**

```
## Not run:  
library(bioCancer)  
bioCancer::metabologram(treeData = sampleMetabologramData)  
  
## End(Not run)
```

---

reStrColorGene	<i>Restructure the list of color attributed to the genes in every dimension for every studies</i>
----------------	---

---

**Description**

Restructure the list of color attributed to the genes in every dimension for every studies

**Usage**

```
reStrColorGene(df)
```

**Arguments**

df                    data frame with colors attributed to the genes

**Value**

Hierarchical color attribute: gene > color

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")  
## Not run:  
geneList <- whichGeneList("73")  
ProfData <- getProfileData(cgds,  
  geneList, "gbm_tcga_pub_mrna", "gbm_tcga_pub_all")  
rownames(ProfData) <- NULL  
ls <- reStrColorGene(ProfData)  
  
## End(Not run)
```

---

reStrDimension	<i>Restructure the list of color attributed to the genes in every study for every dimensions</i>
----------------	--

---

**Description**

Restructure the list of color attributed to the genes in every study for every dimensions

**Usage**

```
reStrDimension(LIST)
```

**Arguments**

LIST	list of hierarchical dimensions
------	---------------------------------

**Value**

Hierarchical structure of: Study > dimensions > gene > color

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
ProfData <- getProfileData(cgds,
  geneList, "gbm_tcga_pub_mrna", "gbm_tcga_pub_all")
rownames(ProfData) <- NULL
TREE <- reStrDimension(list(
  list1=list(df1=ProfData,df2=ProfData),
  list2=list(df3=ProfData,df4=ProfData)))

## End(Not run)
```

---

reStrDisease	<i>Restructure the list of color attributed to the genes in every disease</i>
--------------	---

---

**Description**

Restructure the list of color attributed to the genes in every disease

**Usage**

```
reStrDisease(List)
```

**Arguments**

List	of data frame with color attributes
------	-------------------------------------

**Value**

Hierarchy of dimensions in the same study: dimensions > gene > color

**Examples**

```
cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
ProfData <- getProfileData(cgds,
  geneList, "gbm_tcga_pub_mrna", "gbm_tcga_pub_all")
rownames(ProfData) <- NULL
tree <- reStrDisease(list(df1=ProfData,df2=ProfData))

## End(Not run)
```

---

returnTextAreaInput    *Return message when the filter formula is not correct (mRNA > 500)*

---

**Description**

Return message when the filter formula is not correct (mRNA > 500)

**Usage**

```
returnTextAreaInput(inputId,
  label= NULL,
  rows = 2,
  placeholder = NULL,
  resize= "vertical",
  value = "")
```

**Arguments**

inputId	The ID of the object
label	Text describes the box area
rows	Number of rows
placeholder	Error message if needed
resize	orientation of text
value	default text in the area box

**Value**

text message

**Examples**

```

ShinyApp <- 1
## Not run:
returnTextAreaInput(inputId = "data-filter",
                    label = "Error message",
                    rows = 2,
                    placeholder = "Provide a filter (e.g., Genes == 'ATM') and press return",
                    resize = "vertical",
                    value="")

## End(Not run)

```

---

Studies_obj	<i>get object for grViz. Link Studies to genes</i>
-------------	--

---

**Description**

get object for grViz. Link Studies to genes

**Usage**

```
Studies_obj(df)
```

**Arguments**

df                    data frame with gene classes

**Value**

grViz object. a data frame with Study attributes

**Examples**

```

Studies_obj(data.frame("col1", "col2", "col3", "col4", "col5", "col6"))
## Not run:
Genes ranking      class postProb exprsMeanDiff exprsUpDw
1 FANCF            1 brca_tcga 1.00000      179.9226      UP
2 MLH1            1 gbm_tcga 0.99703      256.3173      UP

## End(Not run)

```

---

switchButton	<i>A function to change the Original checkbox of rshiny into a nice true/false or on/off switch button No javascript involved. Only CSS code.</i>
--------------	---

---

**Description**

To be used with CSS script 'button.css' stored in a 'www' folder in your Shiny app folder

**Usage**

```
switchButton(inputId, label = NULL, value = FALSE, col = "GB", type = "TF")
```

**Arguments**

inputId	The input slot that will be used to access the value.
label	Display label for the control, or NULL for no label.
value	Initial value (TRUE or FALSE).
col	Color set of the switch button. Choose between "GB" (Grey-Blue) and "RG" (Red-Green)
type	Text type of the button. Choose between "TF" (TRUE - FALSE), "OO" (ON - OFF) or leave empty for no text.

---

translate	<i>Translate between different identifiers</i>
-----------	--

---

**Description**

Function for translating from one annotation to another, eg. from RefSeq to Ensemble. This function takes a vector of annotation values and translates first to the primary annotation in the Biocore Data Team package (ie. entrez gene identifier for org.Bt.eg.db) and then to the desired product, while removing non-translated annotations and optionally reducing the result so there is only a one-to-one relation.

**Usage**

```
translate(
  values,
  from,
  to = NULL,
  reduce = c("all", "first", "last"),
  return.list = TRUE,
  remove.missing = TRUE,
  simplify = FALSE,
  ...
)
```

**Arguments**

<code>values</code>	Vector of annotations that needs translation. Coerced to character vector.
<code>from</code>	Type of annotation values are given in. NB! take care in the orientation of the package, ie. if you have RefSeq annotations, use <code>org.Bt.egREFSEQ2EG</code> or (in some cases) <code>revmap(org.Bt.egREFSEQ)</code> .
<code>to</code>	Desired goal, eg. <code>org.Bt.egENSEMBLPROT</code> . If NULL (default), goal if the packages primary annotation (eg. <code>entrez gene</code> for <code>org.Bt.eg.db</code> ). Throws a warning if the organisms in <code>from</code> and <code>to</code> are not the same.
<code>reduce</code>	Reducing method, either return all annotations (one-to-many relation) or the first or last found annotation. The reducing step is applied after translating to the goal: <code>all</code> : returns all annotations <code>first</code> or <code>last</code> : choose first or last of arbitrarily ordered list.
<code>return.list</code>	Logical, when TRUE, returns the translation as a list where names
<code>remove.missing</code>	Logical, whether to remove non-translated values, defaults TRUE.
<code>simplify</code>	Logical, unlists the result. Defaults to FALSE. Usefull when using <code>translate</code> in a <code>lapply</code> or <code>sapply</code> .
<code>...</code>	Additional arguments sent to <code>pickGO</code> if <code>from</code> returns GO set.

**Details**

If you want to do some further mapping on the result, you will have to use either `unlist` or `lapply`, where the first returns all the end-products of the first mapping, returning a new list, and the latter produces a list-within-list.

If `from` returns GO identifiers (e.g. `from = org.Bt.egGO`), then the returned resultset is more complex and consists of several layers of lists instead of the usual list of character vectors. If `to` has also been specified, the GO IDs must be extracted (internally) and you have the option of filtering for evidence and category at this point. See `pickGO`.

**Value**

List; names of elements are `values` and the elements are the translated elements, or NULL if not translatable with `remove.missing = TRUE`.

**Note**

Requires user to deliver the annotation packages such as `org.Bt.egREFSEQ`.

**Author(s)**

Stefan McKinnon Edwards <[stefan.hoj-edwards@agrsci.dk](mailto:stefan.hoj-edwards@agrsci.dk)>

**See Also**

[pickRefSeq](#), [pickGO](#)



**Examples**

```

library(org.Bt.eg.db)
genes <- c(280705, 280706, 100327208)
translate(genes, org.Bt.egSYMBOL)

symbols <- c("SERPINA1", "KERA", "CD5")
refseq <- translate(symbols, from=org.Bt.egSYMBOL2EG, to=org.Bt.egREFSEQ)
# Pick the proteins:
pickRefSeq(refseq, priorities=c('NP', 'XP'), reduce='all')

# If you wanted do do some further mapping on the result from
# translate, simply use lapply.

library(GO.db)
GO <- translate(genes, org.Bt.egGO)
# Get all biological processes:
pickGO(GO, category='BP')
# Get all ontologies with experimental evidence:
pickGO(GO, evidence=c('IMP', 'IGI', 'IPI', 'ISS', 'IDA', 'IEP', 'IEA'))

```

---

UnifyRowNames

*Unify row names in data frame with the same order of gene list.*


---

**Description**

Unify row names in data frame with the same order of gene list.

**Usage**

```
UnifyRowNames(x, geneList)
```

**Arguments**

x	data frame with gene symbol in the row name
geneList	a gene list

**Value**

a data frame having the gene in row name ordered as in gene list.

**Examples**

```

cgds <- CGDS("http://www.cbioportal.org/")
## Not run:
geneList <- whichGeneList("73")
ProfData <- getProfileData(cgds,
  geneList, "gbm_tcga_pub_mrna", "gbm_tcga_pub_all")
rownames(ProfData) <- NULL
geneListOrder <- UnifyRowNames(list(

```

```
list1=list(df1=ProfData,df2=ProfData),
list2=list(df3=ProfData,df4=ProfData)),
geneList)

## End(Not run)
```

---

user\_CNA                      *Example of Copy Number Alteration (CNA) dataset*

---

**Description**

Example of Copy Number Alteration (CNA) dataset

**Usage**

user\_CNA

**Format**

An object of class `data.frame` with 579 rows and 13 columns.

**Author(s)**

Karim Mezhoud <kmezhoud@gmail.com>

---

user\_MetHM27                      *Example of Methylation HM27 dataset*

---

**Description**

Example of Methylation HM27 dataset

**Usage**

user\_MetHM27

**Format**

An object of class `data.frame` with 600 rows and 13 columns.

**Author(s)**

Karim Mezhoud <kmezhoud@gmail.com>

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`user_MetHM450`*Example of Methylation HM450 dataset*

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**Description**

Example of Methylation HM450 dataset

**Usage**`user_MetHM450`**Format**

An object of class `data.frame` with 10 rows and 13 columns.

**Author(s)**

Karim Mezhoud <kmezhoud@gmail.com>

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`user_mRNA`*Example of mRNA expression dataset*

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**Description**

Example of mRNA expression dataset

**Usage**`user_mRNA`**Format**

An object of class `data.frame` with 307 rows and 13 columns.

**Author(s)**

Karim Mezhoud <kmezhoud@gmail.com>

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user_Mut	<i>Example of Mutation dataset</i>
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**Description**

Example of Mutation dataset

**Usage**

```
user_Mut
```

**Format**

An object of class `data.frame` with 37 rows and 23 columns.

**Author(s)**

Karim Mezhoud <kmezhoud@gmail.com>

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whichGeneList	<i>Verify which gene list is selected</i>
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**Description**

Verify which gene list is selected

**Usage**

```
whichGeneList(geneListLabel)
```

**Arguments**

`geneListLabel` The label of GeneList. There are three cases: "Genes" user gene list, "Reactome\_GeneList" GeneList plus genes from reactomeFI "file name" from Examples

**Value**

Gene List label

**Examples**

```
How <- "runManually"  
## Not run:  
whichGeneList("102")  
  
## End(Not run)
```

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widgetThumbnail      *Capture html output widget as .png in R*

---

**Description**

Capture html output widget as .png in R

**Usage**

```
widgetThumbnail(p, thumbName, width = 1024, height = 1024)
```

**Arguments**

p	is the html widget
thumbName	is the name of the new png file
width	1024
height	1024

**Value**

3 files .html, .js and .png

**Examples**

```
How <- "runManually"
## Not run:
# Load package
library(networkD3)
library(htmlwidgets)
# Create fake data
src <- c("A", "A", "A", "A", "B", "B", "C", "C", "D")
target <- c("B", "C", "D", "J", "E", "F", "G", "H", "I")
networkData <- data.frame(src, target)
# Plot
plot = simpleNetwork(networkData)
# Save html as png
widgetThumbnail(p = plot, thumbName = "plot", width = 1024, height = 1024)

## End(Not run)
```

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