

Package ‘pogos’

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Title PharmacOGenomics Ontology Support

Description Provide simple utilities for querying bhklab PharmacODB, modeling API outputs, and integrating to cell and compound ontologies.

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Suggests knitr, DT, ontologyPlot, testthat, rmarkdown, BiocStyle

Imports methods, S4Vectors, utils, shiny, ontoProc, ggplot2, graphics

Depends R (>= 3.5.0), rjson (>= 0.2.15), httr (>= 1.3.1)

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basicDecoder	<i>convert binary output of GET()\$content to list</i>
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Description

convert binary output of GET()\$content to list

Usage

```
basicDecoder(x)
```

Arguments

x	string suitable for input to GET as GET(x)
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Value

output of fromJSON, typically a list

Examples

```
cl = try(basicDecoder('https://pharmacodb.pmgenomics.ca/api/v1/cell_lines'))
if (!inherits(cl, "try-error")) unlist(cl) # or pmgenomics is down
```

compoundsByCell	<i>initial version of compound browser over pharmacoDb cells</i>
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Description

initial version of compound browser over pharmacoDb cells

Usage

```
compoundsByCell()
```

Value

only used for side effect of running shiny app

Note

Simple shiny app demonstrating coverage of PharmacoDb compounds by CHEBI. If a cell line selected is not present in selected dataset, the app will wait for a compatible selection to be made.

Examples

```
if (!requireNamespace("shiny")) stop("install shiny to use compoundsByCell")
if (interactive()) print(compoundsByCell())
```

compounds_v1

*compounds_v1: serialization of compounds info from PharmacoDb v1***Description**

compounds_v1: serialization of compounds info from PharmacoDb v1

Usage

```
compounds_v1  
  
tissues_v1  
  
cell_lines_v1  
  
datasets_v1  
  
CCLE_drts
```

Format

```
S4Vectors DataFrame instance  
S4Vectors DataFrame instance  
S4Vectors DataFrame instance  
S4Vectors DataFrame instance  
DRTraceSet instance
```

Source

```
PharmacoDb Sept 2017  
PharmacoDb Sept 2017  
PharmacoDb Sept 2017  
PharmacoDb Sept 2017  
PharmacoDb April 2018
```

Examples

```
data(compounds_v1)  
head(compounds_v1)  
data(tissues_v1)  
head(tissues_v1)  
data(cell_lines_v1)  
head(cell_lines_v1)  
data(datasets_v1)  
head(datasets_v1)  
data(CCLE_drts)  
CCLE_drts
```

DRProfile-class	<i>DRProfSet is a class for managing dose-response information about cell lines from a pharmacogenomics dataset</i>
-----------------	---

Description

DRProfSet is a class for managing dose-response information about cell lines from a pharmacogenomics dataset

getDrugs extracts drug list

DRProfSet manages all data from a given cell line from a pharmacogenomics source

Usage

```
getDrugs(x)

DRProfSet(cell_line = "MCF7", dataset = "CCLE")

## S4 method for signature 'DRProfSet,missing'
plot(x, y, ...)
```

Arguments

x	instance of DRProfSet
cell_line	character(1) cell line name, entries in cell_lines_v1
dataset	character(1) resource name, entries in datasets_v1
y	for plot: not used
...	not used

Value

getDrugs: character vector

instance of DRProfSet

Examples

```
if (interactive()) trs = DRTraceSet() else trs = iriCCLE()
ps = traces(trs)[[1]]
ps
getDrugs(ps)
if (interactive()) DRProfSet()
```

DRTraceSet-class	<i>DRTraceSet class manages dose-response information for a single cell line, multiple drugs</i>
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Description

DRTraceSet class manages dose-response information for a single cell line, multiple drugs

DRTraceSet constructor for multiple cell lines, single drug, single dataset

Usage

```
## S4 method for signature 'DRTraceSet,missing'
plot(x, y, ...)

DRTraceSet(
  cell_lines = c("SK-ES-1", "TC-71", "MHH-ES-1", "HCC-56", "SK-HEP-1"),
  drug = "Irinotecan",
  dataset = "CCLE"
)
```

Arguments

x	for plot: instance of DRTraceSet
y	for plot: not used
...	not used
cell_lines	character vector of cell line names, must be found in 'cell_lines_v1' data of pogos package
drug	character(1) drug name in 'compounds_v1'
dataset	character(1) dataset known to pharmacodb.pmgenomics.ca

Value

instance of DRTraceSet

Note

Will query pharmacodb for relevant dose-response information

Examples

```
val = try(DRTraceSet())
if (!inherits(val, "try-error")) val
# otherwise pharmacodb.pmgenomics.ca is down
```

iriCCLE	<i>obtain an example trace set stored locally, for irinotecan and selected cell lines</i>
---------	---

Description

obtain an example trace set stored locally, for irinotecan and selected cell lines

Usage

```
iriCCLE()
```

Value

an instance of DRTraceSet

Examples

```
iri = iriCCLE()
iri
plot(iri)
```

rxdbQuery_v1	<i>very simple query formulation, build queries using endpoints of bhklab PharmacODB API</i>
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Description

very simple query formulation, build queries using endpoints of bhklab PharmacODB API

Usage

```
rxdbQuery_v1(
  ...,
  url = "https://pharmacodb.pmgenomics.ca/api/v1/",
  decoder = basicDecoder
)
```

Arguments

...	typically a string representing an API endpoint, will be processed by <code>unlist()</code> and then to <code>paste0</code> preceded by <code>url</code>
<code>url</code>	of a PharmacODB server API target
<code>decoder</code>	a function of one argument that will be applied to API response (typically JSON)

Value

typically a list, dependent on decoder parameter

Examples

```
qout = try(rxdbQuery_v1('cell_lines')) # yields 30; append '?all=true' to retrieve all
if (!inherits(qout, "try-error")) unlist(lapply(qout, function(x) x[[2]]))
# or pmgenomics.ca is down
```

topEndpoints_v1

*enumerate top level endpoint terms for bhklab PharmacODB API***Description**

enumerate top level endpoint terms for bhklab PharmacODB API

Usage

```
topEndpoints_v1()
```

Value

a character vector of available endpoints

Examples

```
topEndpoints_v1()
```

traces

*trace extractor***Description**

trace extractor

Usage

```
traces(x)
```

Arguments

x instance of DRTraceSet

Value

a list of DRProfile instances

Examples

```
iri = iriCCLE()
str(traces(iri)[[1]])
```

[,DRProfSet,character,ANY,ANY-method

subscripting on DRProfSet extracts a profile for a single drug whose name constitutes the index

Description

subscripting on DRProfSet extracts a profile for a single drug whose name constitutes the index

Usage

```
## S4 method for signature 'DRProfSet,character,ANY,ANY'
x[i, j, ..., drop = TRUE]
```

Arguments

x	instance of DRProfSet
i	character(1) drug name
j	not used
...	not used
drop	logical(1) not used

Value

a DRProfSet instance restricted to experiments involving the selected drug

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