

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.

Version 1.31.0

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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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Contents

basicDecoder	2
compoundsByCell	2
compounds_v1	3
DRProfile-class	4

DRTraceSet-class	5
iriCCLE	6
rxdbQuery_v1	6
topEndpoints_v1	7
traces	8
[,DRProfSet,character,ANY,ANY-method	8
Index	10

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)

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	<i>compounds_v1: serialization of compounds info from PharmacoDb v1</i>
--------------	---

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>
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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	<i>enumerate top level endpoint terms for bhklab PharmacODB API</i>
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Description

enumerate top level endpoint terms for bhklab PharmacODB API

Usage

```
topEndpoints_v1()
```

Value

a character vector of available endpoints

Examples

```
topEndpoints_v1()
```

traces	<i>trace extractor</i>
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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	<i>subscribing on DRProfSet extracts a profile for a single drug whose name constitutes the index</i>
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Description

subscribing 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

[,DRProfSet,character,ANY,ANY-method

9

Value

a DRProfSet instance restricted to experiments involving the selected drug

Index

* **datasets**

compounds_v1, [3](#)
[,DRProfSet,character,ANY,ANY-method,
[8](#)

basicDecoder, [2](#)

CCLE_drts (compounds_v1), [3](#)
cell_lines_v1 (compounds_v1), [3](#)
compounds_v1, [3](#)
compoundsByCell, [2](#)

datasets_v1 (compounds_v1), [3](#)
DRProfile-class, [4](#)
DRProfSet (DRProfile-class), [4](#)
DRProfSet-class (DRProfile-class), [4](#)
DRTraceSet (DRTraceSet-class), [5](#)
DRTraceSet-class, [5](#)

getDrugs (DRProfile-class), [4](#)
getDrugs,DRProfSet-method
(DRProfile-class), [4](#)

iriCCLE, [6](#)

plot,DRProfSet,missing-method
(DRProfile-class), [4](#)
plot,DRTraceSet,missing-method
(DRTraceSet-class), [5](#)

rxdbQuery_v1, [6](#)

tissues_v1 (compounds_v1), [3](#)
topEndpoints_v1, [7](#)
traces, [8](#)