Package 'mygene'

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Type Package

Title Access MyGene.Info_ services

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Description MyGene.Info_ provides simple-to-use REST web services to query/retrieve gene annotation data. It's designed with simplicity and performance emphasized. *mygene*, is an easy-to-use R wrapper to access MyGene.Info_ services.

License Artistic-2.0

Depends R (>= 3.2.1), GenomicFeatures, txdbmaker

Imports methods, utils, stats, httr (>= 0.3), jsonlite (>= 0.9.7), Hmisc, sqldf, plyr, S4Vectors

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Contents

getGene 2
getGenes 3
makeTxDbFromMyGene 4
metadata 5
MyGene 5

mygene 6
MyGene-class 7
query 8
queryMany 9

Index **11**

`getGene` *Return the gene object for the given geneid.*

Description

This is a wrapper for GET query of "/gene/<geneid>" service.

Usage

```
getGene(geneid, fields = c("symbol", "name", "taxid", "entrezgene"),
        ..., return.as=c("records", "text"), mygene)
```

Arguments

`geneid`	Entrez/ensembl gene id
`fields`	Fields to return, a list of a comma-sep string. If fields=="all", all available fields are returned.
`...`	Includes `species` as well as several other fields. View available fields by calling `?metadata`. Also, see http://docs.mygene.info/en/latest/doc/annotation_service.html for complete argument details and syntax.
`return.as`	"records"" (list), "text" (JSON).
`mygene`	A MyGene object that describes how to connect to data resources. See `MyGene-class`. If missing, default object will be used that accesses the main MyGene.info portal. Default is recommended.

Value

returns a gene object containing the queried annotations

References

Ref: http://docs.mygene.info/en/latest/doc/annotation_service.html

See Also

`getGenes` `query` `queryMany`

Examples

```
## return the gene object for the given gene id
getGene(1017)

## customize fields
getGene(1017, fields=c("name", "symbol", "refseq"), return.as="text")

## all fields
getGene(1017, fields="all")
```

`getGenes` *Return the list of gene objects for the given list of geneids.*

Description

This is a wrapper for POST query of "/gene" service.

Usage

```
getGenes(geneids, fields = c("symbol", "name", "taxid", "entrezgene"), ...,
          return.as=c("DataFrame", "records", "text"), mygene)
```

Arguments

`geneids`	A vector, list, or comm-sep string entrez/ensembl gene ids
`fields`	A vector of fields to return. If fields=="all", all available fields are returned.
`...`	Includes `species` as well as several other fields. View available fields by calling `?metadata`. Also, see http://docs.mygene.info/en/latest/doc/annotation_service.html for complete argument details and syntax.
`return.as`	"DataFrame" (default), "records" (list), "text" (JSON).
`mygene`	A MyGene object that describes how to connect to data resources. See `MyGene-class`. If missing, default object will be used that accesses the main MyGene.info portal. Default is recommended.

Value

returns a gene object (DataFrame, list, or JSON text) containing the queried annotations

References

Ref: http://docs.mygene.info/en/latest/doc/annotation_service.html

See Also

`getGene` `query` `queryMany`

Examples

```
## Return the list of gene object for the given list of gene ids.
getGenes(c(1017,1018))

## mix types of gene ids
getGenes(c(1017,1018,"ENSG00000148795"))
```

---

makeTxDbFromMyGene *makeTxDbFromMyGene*

Description

makeTxDbFromMyGene allows the user to make a TxDb object in the Genomic Features package from a mygene "exons" query using a default MyGene object.

Usage

```
makeTxDbFromMyGene(gene.list, scopes, species, returnall=FALSE)
```

Arguments

gene.list	A list, vector, or comma-separated string of query terms.
scopes	Type of types of identifiers, either a list, vector, or a comma-separated fields to specify type of input qterms, e.g. c("reporter", "ensembl.gene", "symbol") refer to "http://docs.mygene.info/en/latest/doc/data.html#available-fields" for full list of fields.
species	Names or taxonomy ids
returnall	Logical, if TRUE, return list of genes without exons annotations. False by Default.

Details

makeTxDbFromMyGene invokes either the query or queryMany method and passes the response to construct a TxDb object. See ?TxDb for utilizing transcript annotations.

Value

returns TxDb object

See Also

makeTxDb

Examples

```
xli <- c('DDX26B','CCDC83','MAST3', 'RPL11')
txdb <- makeTxDbFromMyGene(xli, scopes="symbol", species="human")
```

`metadata` *metadata*

Description

Get metadata for MyGene.info services.

Usage

```
metadata(x, ...)
```

Arguments

`x`	MyGene object
`...`	MyGene object slot parameters

Value

returns the metadata including available fields, genome assemblies, sources, statistics, taxonomy, and timestamp

References

http://mygene.info/v2/metadata

Examples

```
## Get metadata
mygene<-MyGene()
metadata(mygene)

## get available fields to return
metadata(mygene)$available_fields
```

`MyGene` *MyGene*

Description

Construct a MyGene object.

Usage

```
MyGene(...)
```

Arguments

...	See help page for MyGene-class

Value

MyGene object

Examples

```
MyGene()
```

---

mygene *Access MyGene.info annotation services*

Description

MyGene.Info_ provides simple-to-use REST web services to query/retrieve gene annotation data. It's designed with simplicity and performance emphasized. *mygene* is an easy-to-use R wrapper to access MyGene.info services.

Details

Package:	mygene
Type:	Package
Version:	0.99.0
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License:	BSD
Depends:	httr jsonlite Hmisc

Author(s)

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References

Wu C, MacLeod I, Su AI (2013) BioGPS and MyGene.info: organizing online, gene-centric information. Nucl. Acids Res. 41(D1): D561-D565. http://mygene.info/doc/annotation_service.html http://mygene.info/doc/query_service.html

MyGene-class *Class* "MyGene"

Description

R Client to access MyGene.Info annotation services

Objects from the Class

Objects can be created by calls of the form `MyGene(base.url="http://mygene.info/v2", delay=1, step=1000, version=version, verbose=TRUE, debug=FALSE)`.

Slots

base.url: "http://mygene.info/v2". Object of class "character"

delay: Sleep time between batch retrieval. Object of class "numeric"

step: Batch limit. Object of class "numeric"

version: httr package version. Object of class "character"

verbose: Object of class "logical"

debug: Object of class "logical"

Methods

`getGene(geneid, fields = c("symbol", "name", "taxid", "entrezgene"), ..., return.as=c("records", "text")`
Return the gene object for the given geneid

`getGenes(geneids, fields = c("symbol", "name", "taxid", "entrezgene"), ..., return.as=c("DataFrame", "re`
Return the list of gene object for the given list of geneids.

`query(q, fields=c("name", "symbol", "taxid", "entrezgene"), ..., return.as=c("DataFrame", "records", "t`
Return the query result.

`queryMany(qterms, scopes=NULL, fields=c("name", "symbol", "taxid", "entrezgene"), ..., return.as=c("Dat`
Return the batch query result.

`metadata(x, ...)`: Get metadata for MyGene.info services.

`makeTxDbFromMyGene(gene.list, scopes, species, returnall=FALSE)`: Make a TxDb object from transcript annotations

Author(s)

Adam Mark, Chunlei Wu, Ryan Thompson

References

Wu C, MacLeod I, Su AI (2013) BioGPS and MyGene.info: organizing online, gene-centric information. Nucl. Acids Res. 41(D1): D561-D565.

Examples

```
showClass("MyGene")
```

query *Return the query result.*

Description

This is a wrapper for GET query of "/query?q=<query>" service.

Usage

```
query(q, ..., return.as=c("DataFrame", "records", "text"), mygene)
```

Arguments

q	query term(s), see query syntax at http://mygene.info/doc/query_service.html#query-syntax
...	Commonly queried fields include species, fields, size as well as several other fields. View available fields by calling ?metadata. Also, see http://docs.mygene.info/en/latest/doc/q for complete argument details and syntax.
return.as	"DataFrame" (default), "records" (list), or "text" (JSON).
mygene	A MyGene object that describes how to connect to data resources. See MyGene-class. If missing, default object will be used that accesses the main MyGene.info portal. Default is recommended.

Value

returns a gene object (DataFrame, list, or JSON text) containing the queried annotations

References

Ref: http://docs.mygene.info/en/latest/doc/query_service.html

See Also

queryMany getGene getGenes

Examples

```
## return the query result
query("cdk2", size=5)

query("reporter:1000_at")

query("symbol:cdk2", return.as="text")

query(q="cyclin-dependent kinase", fields="uniprot")
```

queryMany *Return the batch query result.*

Description

This is a wrapper for POST query of "/query" service.

Usage

```
queryMany(qterms, scopes=NULL, ..., return.as=c("DataFrame", "records", "text"), mygene)
```

Arguments

qterms	A vector or list, or string of comma-separated query terms
scopes	Type of types of identifiers, either a list or a comma-separated fields to specify type of input qterms, e.g. c("reporter", "ensembl.gene", "symbol") refer to "http://mygene.info/doc/query_service.html#available_fields" for full list of fields.
...	Commonly queried fields include species, fields, size as well as several other fields. returnall returns a list of all related data including duplicated and missing qterms. False by default. View available fields by calling ?metadata. Also, see http://docs.mygene.info/en/latest/doc/query_service.html for complete argument details and syntax.
return.as	"DataFrame" (default), "records" (list), "text" (JSON).
mygene	A MyGene object that describes how to connect to data resources. See MyGene-class. If missing, default object will be used that accesses the main MyGene.info portal. Default is recommended.

Value

returns a gene object (DataFrame, list, or JSON text) containing the queried annotations

References

Ref: http://docs.mygene.info/en/latest/doc/query_service.html

See Also

query getGene getGenes

Examples

```
## return the batch query result
queryMany(c('1053_at', '117_at', '121_at'), scopes="reporter", fields="ensembl.gene",
          species="human", return.as="records")

queryMany(c('1053_at', '117_at', '121_at'), scopes="reporter", species=9606)
```

```
queryMany(c('DDX26B', 'CCDC83', 'MAST3', 'FLOT1'), scopes="symbol", fields="entrezgene", species="human")
```

Index

∗ **classes**
MyGene-class, 7
∗ **package**
mygene, 6

getGene, 2, *3*, *8, 9*
getGene,missing-method *(*getGene*)*, 2
getGene,MyGene-method *(*getGene*)*, 2
getGenes, *2*, 3, *8, 9*
getGenes,missing-method *(*getGenes*)*, 3
getGenes,MyGene-method *(*getGenes*)*, 3

makeTxDb, *4*
makeTxDbFromMyGene, 4
metadata, 5
metadata,MyGene-method *(*metadata*)*, 5
MyGene, 5
mygene, 6
MyGene-class, 7

query, *2, 3*, 8, *9*
query,missing-method *(*query*)*, 8
query,MyGene-method *(*query*)*, 8
queryMany, *2, 3*, *8*, 9
queryMany,missing-method *(*queryMany*)*, 9
queryMany,MyGene-method *(*queryMany*)*, 9