

Package ‘myvariant’

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Type Package

Title Accesses MyVariant.info variant query and annotation services

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Description MyVariant.info is a comprehensive aggregation of variant annotation resources. myvariant is a wrapper for querying MyVariant.info services

License Artistic-2.0

Depends R (>= 3.2.1), VariantAnnotation

Imports htr, jsonlite, S4Vectors, Hmisc, plyr, magrittr, GenomeInfoDb

Suggests BiocStyle

biocViews VariantAnnotation, Annotation, GenomicVariation

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Contents

| | |
|----------------------------|-----------|
| formatHgvs | 2 |
| formatSingleHgvs | 2 |
| getVariant | 3 |
| getVariants | 4 |
| metadata | 5 |
| MyVariant | 6 |
| myvariant | 6 |
| MyVariant-class | 7 |
| queryVariant | 8 |
| queryVariants | 9 |
| Index | 10 |

| | |
|------------|--|
| formatHgvs | <i>Get all HGVS IDs from Vcf object.</i> |
|------------|--|

Description

Read in a Vcf object created by `readVcf` to extract all HGVS IDs for querying MyVariant.info.

Usage

```
formatHgvs(vcf, variant_type = c("snp", "insertion", "deletion"))
```

Arguments

| | |
|--------------|--|
| vcf | Vcf object created by <code>readVcf</code> . |
| variant_type | Type of variant HGVS IDs to retrieve from Vcf object. Default <code>c("snp", "insertion", "deletion")</code> |

Value

vector

References

<https://myvariant.info> <http://www.hgvs.org/mutnomen/recs-DNA.html>

See Also

`formatSingleHgvs`

Examples

```
## return HGVS IDs for all snps in a Vcf
file.path <- system.file("extdata", "dbsnp_mini.vcf", package="myvariant")
vcf <- readVcf(file.path, genome="hg19")
hgvs <- formatHgvs(vcf, variant_type="snp")
```

| | |
|------------------|---|
| formatSingleHgvs | <i>Get Hgvs HGVS ID from chromosome, position, reference and alternate alleles.</i> |
|------------------|---|

Description

Create a single HGVS ID for a variant from chromosome, position, reference and alternate alleles.

Usage

```
formatSingleHgvs(chrom, pos, ref, alt, mutant_type=FALSE)
```

Arguments

| | |
|-------------|---|
| chrom | Chromosome. |
| pos | Position of the variant on the reference genome (hg19). |
| ref | Reference allele. |
| alt | Alternate allele. |
| mutant_type | Logical indicating whether to return the type of mutation along with the HGVS ID. |

Value

returns a string

References

<https://myvariant.info> <http://www.hgvs.org/mutnomen/recs-DNA.html>

See Also

[formatHgvs](#)

Examples

```
## return HGVS ID for a variant
formatSingleHgvs(1, 35367, "G", "A")
```

| | |
|------------|---|
| getVariant | <i>Return the variant object for the given HGVS id.</i> |
|------------|---|

Description

This is a wrapper for GET query of `"/variant/<hgvsid>"` service.

Usage

```
getVariant(hgvsid, fields=NULL,
           ..., return.as=c("records", "text"), myvariant)
```

Arguments

| | |
|-----------|---|
| hgvsid | HGVS id |
| fields | Fields to return, a list of a comma-sep string. If fields=="all", all available fields are returned. |
| ... | |
| return.as | "records" (list), "text" (JSON). |
| myvariant | A MyVariant object that describes how to connect to data resources. See MyVariant-class . If missing, default object will be used that accesses the main MyVariant.info portal. Default is recommended. |

Value

returns a variant object containing the queried annotations

References

http://docs.myvariant.info/en/latest/doc/variant_annotation_service.html#get-request <http://docs.myvariant.info/en/latest/parameters>

See Also

[getVariants](#) [queryVariant](#) [queryVariants](#)

Examples

```
## return the variant object for the given HGVS id
getVariant("chr7:g.55241707G>T")

## customize fields
getVariant("chr7:g.55241707G>T",
           fields=c("dbnsfp.cadd.phred", "dbnsfp.polyphen2"),
           return.as="text")
```

getVariants

Return the list of variant objects for the given list of HGVS ids.

Description

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

Usage

```
getVariants(hgvsids, fields=NULL, verbose=NULL, ...,
            return.as=c("DataFrame", "records", "text"), myvariant)
```

Arguments

| | |
|-----------|---|
| hgvsids | A vector, list, or comm-sep string HGVS ids |
| fields | A vector of fields to return. If <code>fields=="all"</code> , all available fields are returned. |
| verbose | A logical turning on or off process status messages. Default = TRUE. |
| ... | |
| return.as | "DataFrame" (default), "records" (list), "text" (JSON). |
| myvariant | A MyVariant object that describes how to connect to data resources. See MyVariant-class . If missing, default object will be used that accesses the main MyVariant.info portal. Default is recommended. |

Value

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

References

http://docs.myvariant.info/en/latest/doc/variant_annotation_service.html#batch-queries-via-post http://docs.myvariant.info/en/latest/doc/variant_annotation_service.html#batch-queries-via-post

See Also

[getVariants](#) [queryVariant](#) [queryVariants](#)

Examples

```
## given a list of HGVS ids
vars <- c('chr1:g.866422C>T',
          'chr1:g.876664G>A',
          'chr1:g.69635G>C',
          'chr1:g.69869T>A',
          'chr1:g.881918G>A',
          'chr1:g.865625G>A',
          'chr1:g.879368C>A',
          'chr1:g.889226C>T',
          'chr1:g.879492C>G',
          'chr1:g.879423T>G',
          'chr1:g.881602C>T',
          'chr1:g.879115C>G',
          'chr1:g.69892T>C',
          'chr1:g.879381C>T',
          'chr1:g.878330C>G')

## Return the list of variant object for the given list of HGVS ids.
df <- getVariants(vars, fields="dbsnp, welllderly")
```

metadata

metadata

Description

Get metadata for MyVariant.info services.

Usage

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

Arguments

| | |
|-----|----------------------------------|
| x | MyVariant object |
| ... | MyVariant object slot parameters |

Value

returns the metadata including available databases and number of documents.

References

<http://myvariant.info/v1/metadata>

Examples

```
## Get metadata
myvariant<-MyVariant()
metadata(myvariant)
```

MyVariant

MyVariant

Description

Construct a MyVariant object.

Usage

```
MyVariant(...)
```

Arguments

... See help page for MyVariant-class

Value

MyVariant object

Examples

```
MyVariant()
```

myvariant

Access MyVariant.info variant annotation services

Description

MyVariant.Info provides REST web services to query/retrieve variant annotations. myvariant is an easy-to-use R wrapper to access MyVariant.info services.

Details

```
Package: myvariant
Type: Package
Version: 0.99.0
Date: 2014-12-18
License: Artistic-2.0
Depends: httr jsonlite Hmisc
```

Author(s)

Adam Mark

Maintainer: Adam Mark <adammark@scripps.edu>

References<https://github.com/Network-of-BioThings/myvariant.info/wiki>

| | |
|-----------------|-------------------|
| MyVariant-class | Class "MyVariant" |
|-----------------|-------------------|

Description

R Client to access MyVariant.Info annotation services

Objects from the Class

Objects can be created by calls of the form `MyVariant(base.url="http://myvariant.info/v1", delay=1, step=1000, version=version, verbose=TRUE, debug=FALSE)`.

Slots

`base.url`: "http://myvariant.info/v1". 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

`getVariant(hgvsid, fields=NULL, ..., return.as=c("records", "text"))`: Return the variant object for the given hgvsid

`getVariants(hgvsids, fields=NULL, ..., return.as=c("DataFrame", "records", "text"))`: Return the list of variant object for the given list of hgvsids.

`queryVariant(q, fields=NULL, ..., return.as=c("DataFrame", "records", "text"))`: Return the query result.

`queryVariants(qterms, scopes=NULL, fields=NULL, ..., return.as=c("DataFrame", "records", "text"), r`
 Return the batch query result.

Author(s)

Adam Mark

References<https://github.com/Network-of-BioThings/myvariant.info/wiki>**Examples**

```
showClass("MyVariant")
```

| | |
|--------------|---------------------------------|
| queryVariant | <i>Return the query result.</i> |
|--------------|---------------------------------|

Description

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

Usage

```
queryVariant(q, ..., return.as=c("DataFrame", "records", "text"),
             myvariant)
```

Arguments

| | |
|-----------|---|
| q | query term(s). |
| ... | Commonly queried fields include <code>fields</code> , <code>size</code> as well as several other fields. View available fields by calling <code>?metadata</code> . |
| return.as | "DataFrame" (default), "records" (list), or "text" (JSON). |
| myvariant | A MyVariant object that describes how to connect to data resources. See MyVariant-class . If missing, default object will be used that accesses the main MyVariant.info portal. Default is recommended. |

Value

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

References

http://docs.myvariant.info/en/latest/doc/variant_query_service.html#get-request <http://docs.myvariant.info/en/latest/doc/syntax>

See Also

[queryVariants](#) [getVariant](#) [getVariants](#)

Examples

```
## return the query result
queryVariant("dbnsfp.variantname:BRCA2")

queryVariant("chr1:1-1000000")
```

| | |
|---------------|---------------------------------------|
| queryVariants | <i>Return the batch query result.</i> |
|---------------|---------------------------------------|

Description

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

Usage

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

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. |
| ... | Commonly queried fields include 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. |
| return.as | "DataFrame" (default), "records" (list), "text" (JSON). |
| myvariant | A MyVariant object that describes how to connect to data resources. See MyVariant-class . If missing, default object will be used that accesses the main MyVariant.info portal. Default is recommended. |

Value

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

References

http://docs.myvariant.info/en/latest/doc/variant_query_service.html#batch-queries-via-post <http://docs.myvariant.info/en/>

See Also

[queryVariant](#) [getVariant](#) [getVariants](#)

Examples

```
## return the batch query result
```

Index

* classes

MyVariant-class, 7

* package

myvariant, 6

formatHgvs, 2, 3

formatSingleHgvs, 2, 2

getVariant, 3, 8, 9

getVariant,missing-method (getVariant),
3

getVariant,MyVariant-method
(getVariant), 3

getVariants, 4, 4, 5, 8, 9

getVariants,missing-method
(getVariants), 4

getVariants,MyVariant-method
(getVariants), 4

metadata, 5

metadata,MyVariant-method (metadata), 5

MyVariant, 6

myvariant, 6

MyVariant-class, 7

queryVariant, 4, 5, 8, 9

queryVariant,missing-method
(queryVariant), 8

queryVariant,MyVariant-method
(queryVariant), 8

queryVariants, 4, 5, 8, 9

queryVariants,missing-method
(queryVariants), 9

queryVariants,MyVariant-method
(queryVariants), 9

readVcf, 2