

# Package ‘queryup’

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**Type** Package

**Title** Query the 'UniProtKB' REST API

**Version** 1.0.5

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**Description** Retrieve protein information from  
the 'UniProtKB' REST API (see <[https://www.uniprot.org/help/api\\_queries](https://www.uniprot.org/help/api_queries)>).

**License** GPL-3

**URL** <https://github.com/VoisinneG/queryup>

**BugReports** <https://github.com/VoisinneG/queryup/issues>

**Depends** R (>= 2.10)

**Imports** httr, jsonlite, utils

**Suggests** covr, knitr, xml2, rmarkdown, testthat (>= 3.0.0)

**Config/testthat/edition** 3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.1.2

**VignetteBuilder** knitr

**NeedsCompilation** no

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**Repository** CRAN

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build_query_url	<i>Accessory function used to build the query url</i>
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### Description

Accessory function used to build the query url

### Usage

```
build_query_url(
  query = NULL,
  base_url = "https://rest.uniprot.org/uniprotkb/",
  columns = c("accession", "id", "gene_names", "organism_name", "reviewed"),
  format = "json"
)
```

### Arguments

query	list of keys corresponding to UniProt's query fields. For example : <code>list("gene_exact" = c("Pik3r1", "Pik3r2"), "organism" = c("10090", "9606"), "reviewed" = "yes")</code>
base_url	The base url for the UniProt REST API
columns	names of UniProt data columns to retrieve.
format	format of the response provided by the UniProt API

### Value

the query url

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clean_query	<i>Accessory function removing invalid values from a query</i>
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### Description

Accessory function removing invalid values from a query

### Usage

```
clean_query(query, df)
```

**Arguments**

query	list of keys corresponding to UniProt's query fields. For example : list("gene_exact" = c("Pik3r1", "Pik3r2"), "organism" = c("10090", "9606"), "reviewed" = "yes")
df	data.frame with invalid values (in column "value") and corresponding query field (in column "field").

**Value**

the input query without the invalid values

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get_uniprot_data	<i>Retrieve data from UniProt using UniProt's REST API</i>
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**Description**

Retrieve data from UniProt using UniProt's REST API

**Usage**

```
get_uniprot_data(
  query = NULL,
  base_url = "https://rest.uniprot.org/uniprotkb/",
  columns = c("accession", "id", "gene_names", "organism_id", "reviewed")
)
```

**Arguments**

query	list of keys corresponding to UniProt's query fields. For example : list("gene_exact" = c("Pik3r1", "Pik3r2"), "organism" = c("10090", "9606"), "reviewed" = "yes"). See 'query_fields' for available query fields.
base_url	The base url for the UniProt REST API
columns	names of UniProt data columns to retrieve. Examples include "accession", "id", "gene_names", "keyword", "sequence". See 'return_fields' for available return fields.

**Value**

a list with the following items :

**url** the query url

**status** the http status code for the request

**messages** messages returned by the REST API

**content** a data.frame containing the query results

**Examples**

```
#Getting gene names, keywords and protein sequences for a set of UniProt IDs.
ids <- c("P22682", "P47941")
cols <- c("accession", "id", "gene_names", "keyword", "sequence")
query = list("accession_id" = ids)
df <- get_uniprot_data(query = query, columns = cols)$content
df
```

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parse_messages	<i>Accessory function retrieving invalid values from messages returned by the UniProt API.</i>
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**Description**

Accessory function retrieving invalid values from messages returned by the UniProt API.

**Usage**

```
parse_messages(messages)
```

**Arguments**

messages            character string containing the error messages returned by UniProt API

**Value**

a data.frame with invalid values (in column "value") and corresponding query field (in column "field"). NULL if no invalid values are identified.

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query_fields	<i>Available query fields.</i>
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**Description**

Query fields that can be used to generate queries using 'queryup' along with associated examples and description.

**Usage**

```
query_fields
```

**Format**

A data frame with 44 rows and 3 variables:

**field** Name of the query field

**example** Example query (as appearing in the query url)

**description** Description of the example query

**Source**

<https://www.uniprot.org/help/query-fields>

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query_uniprot	<i>Retrieve data from UniProt using UniProt's REST API.</i>
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**Description**

Retrieve data from UniProt using UniProt's REST API. To avoid non-responsive queries, they are split into smaller queries with at most `max_keys` items per query field. Note that it works only with queries where items within query fields are collapsed with '+OR+' and different query fields are collapsed with '+AND+' (see `query_uniprot()`)

**Usage**

```
query_uniprot(
  query = NULL,
  base_url = "https://rest.uniprot.org/uniprotkb/",
  columns = c("accession", "id", "gene_names", "organism_id", "reviewed"),
  max_keys = 200,
  updateProgress = NULL,
  show_progress = TRUE
)
```

**Arguments**

<code>query</code>	list of keys corresponding to UniProt's query fields. For example : <code>query = list("gene_exact" = c("Pik3r1", "Pik3r2"), "organism_id" = c("10090", "9606"), "reviewed" = "true")</code> . See 'query_fields' for available query fields.
<code>base_url</code>	The base url for the UniProt REST API
<code>columns</code>	names of UniProt data columns to retrieve. Examples include "accession", "id", "genes", "keywords", "sequence". See 'return_fields' for available return fields.
<code>max_keys</code>	maximum number of field items submitted
<code>updateProgress</code>	used to display progress in shiny apps
<code>show_progress</code>	Show progress bar

**Value**

a data.frame

**Examples**

```
# Get the UniProt entries of all proteins encoded by gene Pik3r1
ids <- c("P22682", "P47941")
query = list("accession_id" = ids)
df <- query_uniprot(query = query)
head(df)
```

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return_fields	<i>Available return fields ("columns").</i>
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**Description**

Return fields that can be retrieved using 'queryup' along with their label (column "Label") as appearing in the retrieved data.frame.

**Usage**

```
return_fields
```

**Format**

A data frame with 287 rows and 2 variables:

**field** Name of the returned field

**label** Label of the corresponding column in the retrieved data.frame

**Source**

[https://www.uniprot.org/help/return\\_fields](https://www.uniprot.org/help/return_fields)

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uniprot_entries	<i>Information for 1000 UniProt entries from the organism Mus musculus</i>
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**Description**

Entry names and other attributes of 1000 UniProt entries in Mus musculus.

**Usage**

```
uniprot_entries
```

**Format**

A data frame with 1000 rows and 5 variables:

**Entry** UniProt entry accession id

**Entry Name** UniProt entry name

**Gene Names** Gene names

**Organism (ID)** Taxon ID

**Reviewed** Swiss-Prot review status

**Source**

<https://www.uniprot.org/>

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