Package ‘biolink’

August 21, 2023

Type Package

Title Create Hyperlinks to Biological Databases and Resources

Description Generate urls and hyperlinks to commonly used biological databases and resources based on standard identifiers. This is primarily useful when writing dynamic reports that reference things like gene symbols in text or tables, allowing you to, for example, convert gene identifiers to hyperlinks pointing to their entry in the 'NCBI' Gene database. Currently supports 'NCBI' Gene, 'PubMed', Gene Ontology, 'KEGG', CRAN and Bioconductor.

Version 0.1.8

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Encoding UTF-8

Imports rentrez, xml2, DBI, RMySQL, glue, memoise

Suggests testthat, lintr, httr, covr

RoxygenNote 7.2.3

NeedsCompilation no

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build_link  

**Construct hypertext links**

**Description**

Convert a bare url to a valid hyperlink formatted for a Markdown, HTML or LaTeX document.

**Usage**

```r
build_link(url, text = NULL, title = NULL, format = "markdown")
```

**Arguments**

- `url` URL where you want the link to point
- `text` displayed text
- `title` link title, often used in tooltips
- `format` generate links using "html", "markdown" or "latex" syntax

**Examples**

```r
build_link("https://r-project.org", "R", "The R Project")
```

**links**  

**Construct hyperlinks to online resources**

**Description**

These resource-specific functions return a hyperlink to the relevant online database/resource based on the provided identifier (id).

**Usage**

```r
link_go(id, text = id, title = NULL, format = "html")
link_kegg(id, text = id, title = NULL, format = "html")
link_pubmed(id, text = id, title = NULL, format = "html")
link_entrez(id, text = id, title = NULL, format = "html")
link_cran(id, text = id, title = NULL, format = "html")
link_bioc(id, text = id, title = NULL, format = "html")
```
Arguments

- **id**: valid identifier for the relevant online database
- **text**: displayed text
- **title**: link title, often used in tooltips
- **format**: generate links using "html", "markdown" or "latex" syntax

Functions

- **link_go()**: to Gene Ontology Consortium
- **link_kegg()**: to KEGG Pathway Database
- **link_pubmed()**: to PubMed based on PMID (PubMed identifier)
- **link_entrez()**: to NCBI's database for gene-specific information based on Entrez ID
- **link_cran()**: for R packages available from CRAN
- **link_bioc()**: for R packages available from Bioconductor

Link Customization

By default the hyperlinked text is just the id, so `link_pubmed("22066989")` becomes 22066989. The text argument allows you to customize the hyperlinked text. To display a hyperlinked URL (e.g., https://www.r-project.org), set `text = NULL`.

Data Tags

For a few supported online resources, specially formatted tags can be passed to the text and title arguments to display live data obtained from the corresponding resource. For example, `link_entrez("4609", text = "<symbol>")`, produces MYC, displaying the gene symbol rather than the Entrez ID. We could also set `title = "<description>"` to produce a link that reveals the gene's description when a user hovers over the link (using a supported browser).

Currently supported data tags:

**NCBI Entrez**:

- **symbol**: Gene symbol
- **description**: Gene description
- **location**: Cytogenetic location

**NCBI PubMed**:

- **title**: Article title
- **year**: Publication year
- **journal**: Journal title

**Gene Ontology**:

- **name**: GO term name
- **definition**: GO term definition
References

• Gene Ontology Consortium
• KEGG Pathway Database
• NCBI PubMed
• NCBI Gene

Examples

link_go("GO:0005539", format = "html")
link_kegg("hsa04915", format = "html")
link_pubmed("22066989", format = "html")
link_entrez("4609", format = "html")

urls

Construct urls to online resources

Description

These resource-specific functions return a bare url (i.e., not a hyperlink) to the relevant online database/resource based on the provided identifier.

Usage

url_go(id)
url_kegg(id)
url_pubmed(id)
url_entrez(id)
url_cran(id)
url_bioc(id)

Arguments

id valid identifier for the relevant online database

Functions

• url_go(): for Gene Ontology Consortium
• url_kegg(): for KEGG Pathway Database
• url_pubmed(): for PubMed based on PMID (PubMed identifier)
• url_entrez(): for NCBI’s database for gene-specific information based on Entrez ID
• url_cran(): for R packages available from CRAN
• url_bioc(): for R packages available from Bioconductor
Examples

  # gene ontology url
  url_go("GO:0005539")

  # KEGG pathway url
  url_kegg("hsa04915")

  # PubMed article url
  url_pubmed("23193287")
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