

# Package ‘fanyi’

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**Title** Translate Words or Sentences via Online Translators

**Version** 0.0.8

**Description** Useful functions to translate text for multiple languages using online translators.

For example, by translating error messages and descriptive analysis results into a language familiar to the user, it enables a better understanding of the information, thereby reducing the barriers caused by language.

It offers several helper functions to query gene information to help interpretation of interested genes (e.g., marker genes, differential expression genes), and provides utilities to translate 'ggplot' graphics. This package is not affiliated with any of the online translators.

The developers do not take responsibility for the invoice it incurs when using this package, especially for exceeding the free quota.

**Depends** R (>= 4.2.0)

**Imports** digest, ggfun (>= 0.1.3), httr2, jsonlite, openssl, purrr, rentrez, rlang, SSEparser, utils, uuid, yulab.utils (>= 0.1.6)

**ByteCompile** true

**License** Artistic-2.0

**URL** <https://github.com/YuLab-SMU/fanyi>,  
<https://www.biorxiv.org/content/10.1101/2023.12.21.572729>

**BugReports** <https://github.com/YuLab-SMU/fanyi/issues>

**Encoding** UTF-8

**RoxygenNote** 7.3.2

**NeedsCompilation** no

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baidu_translate	<i>translate</i>
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### Description

Translate query sentences

### Usage

baidu\_translate(x, from = "en", to = "zh")

bing\_translate(x, from = "en", to = "zh")

caiyun\_translate(x, from = "auto", to = "zh")

chatglm\_translate(x, from = "en", to = "zh")

dsk\_translate(x, from = "en", to = "zh")

qwen\_translate(x, from = "en", to = "zh")

tencent\_translate(x, from = "en", to = "zh")

en2cn(x)

cn2en(x)

translate(x, from = "en", to = "zh")

volcengine\_translate(x, from = "en", to = "zh")

youdao\_translate(x, from = "en", to = "zh")

**Arguments**

x	query sentences
from	source language, i.e., the language to be translated
to	target language, i.e., the language to be translated into

**Details**

This function use online translator API (one of Baidu, bing, youdao, volcengine, caiyun, tencent and LLM) to translate query sentences

**Value**

the translated sentences

**Author(s)**

Guangchuang Yu

**Examples**

```
baidu_translate('hello world')

library(fanyi)
## set your appid and key once in your R session
#
# set_translate_option(appid = 'your_appid', key = 'your_key', source = 'which_translation_service')
#
# translate('hello world', from = 'en', to = 'zh')
```

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fanyi\_has\_appkey      *fanyi\_has\_appkey*

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**Description**

test whether there has an appkey setting for the specific source

**Usage**

```
fanyi_has_appkey(source)
```

**Arguments**

source	one of the supported translate services
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**Value**

logical value

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gene_summary	<i>gene_summary</i>
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**Description**

query gene information from NCBI

**Usage**

```
gene_summary(entrez)
```

**Arguments**

entrez            entrez gene IDs

**Details**

This function query gene information (including gene name, description and summary) from NCBI Gene database

**Value**

A data frame containing the information

**Author(s)**

Guangchuang Yu

**Examples**

```
## Not run:  
gene_summary('1236')  
  
## End(Not run)
```

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get_translate_text	<i>get_translate_text</i>
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**Description**

access translated text from online translator response

**Usage**

```
get_translate_text(response)
```

**Arguments**

response            return from the online translator

**Value**

translated text

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name2sci	<i>name2sci</i>
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**Description**

convert species common name to scientific name

**Usage**

name2sci(x)

**Arguments**

x                    common names

**Details**

The function query species common name via the NCBI Taxonomy database and return corresponding scientific name

**Value**

corresponding scientific names

**Examples**

```
## Not run:  
name2sci("tiger")  
  
## End(Not run)
```

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set\_translate\_option    *set\_translate\_option*

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### Description

set appid and key of translation engine

### Usage

```
set_translate_option(  
    appid,  
    key,  
    source = "baidu",  
    region = "southeastasia",  
    user_dict = NULL,  
    user_model = "glm-4"  
)
```

### Arguments

appid	appid, "bing translate" will not use this input.
key	app key
source	translation engine
region	this is for bing use only, translation engine location, depends on your Azure service setting
user_dict	user defined dictionary ID, only used for 'source = "youdao"'
user_model	selected model used in for 'source = "chatglm"', one of turbo, pro, standard and lite

### Details

This function allows users to use their own appid and key

### Value

No return value, called for side effects

### Author(s)

Guangchuang Yu

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set\_translate\_source    *set source of online translator service*

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**Description**

This function allows users to set the default source for translate() function

**Usage**

```
set_translate_source(source)
```

**Arguments**

source                    translation engine

**Value**

No return value, called for side effects

**Author(s)**

Guangchuang Yu

**Examples**

```
set_translate_source("baidu")
```

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symbol2entrez            *search\_gene*

---

**Description**

search genes and return corresponding entrez ids

**Usage**

```
symbol2entrez(x, organism = "Homo sapiens")
```

```
search_gene(x, organism = "Homo sapiens")
```

**Arguments**

x                            terms to search  
organism                    corresponding organism of the input terms

**Details**

This function query genes (e.g., symbols) from NCBI Gene database and return corresponding entrez gene IDs

**Value**

A data frame with TERM and ENTREZ columns

**Author(s)**

Guangchuang Yu

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translate_ggplot	<i>translate_ggplot</i>
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**Description**

Translate axis label of a ggplot

**Usage**

```
translate_ggplot(plot, axis = "xy", from = "en", to = "zh")
```

**Arguments**

plot	a ggplot object to be translated
axis	one of 'x', 'y' or 'xy' to select axis labels to be translated
from	source language, i.e., the language to be translated
to	target language, i.e., the language to be translated into

**Details**

This function use the translate() function to translate axis labels of a ggplot

**Value**

a translated ggplot object

**Author(s)**

Guangchuang Yu



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`ydict`*ydict*

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**Description**

check English word in Youdao dictionary

**Usage**

```
ydict(word, web = FALSE)
```

**Arguments**

<code>word</code>	word to check
<code>web</code>	whether open youdao dict in web browser

**Value**

interpretation from youdao dictionary

**Examples**

```
## Not run:  
ydict('panda')  
ydict(tiger) # unquoted word is supported  
  
# if using a word stored in a variable  
#  
x <- 'panda'  
ydict(!rlang::sym(x))  
  
## End(Not run)
```

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