porcine.db
August 7, 2024

porcineACCNUM  Map Manufacturer identifiers to Accession Numbers

Description

porcineACCNUM is an R object that contains mappings between a manufacturer’s identifiers and manufacturers accessions.

Details

For chip packages such as this, the ACCNUM mapping comes directly from the manufacturer. This is different from other mappings which are mapped onto the probes via an Entrez Gene identifier.

Each manufacturer identifier maps to a vector containing a GenBank accession number.

Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14

See Also

• AnnotationDb-class for use of the select() interface.

Examples

```r
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
x <- porcineACCNUM
# Get the probe identifiers that are mapped to an ACCNUM
mapped_probes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0) {
  # Get the ACCNUM for the first five probes
  xx[1:5]
```
porcineALIAS2PROBE  

Map between Common Gene Symbol Identifiers and Manufacturer Identifiers

Description

porcineALIAS is an R object that provides mappings between common gene symbol identifiers and manufacturer identifiers.

Details

Each gene symbol is mapped to a named vector of manufacturer identifiers. The name represents the gene symbol and the vector contains all manufacturer identifiers that are found for that symbol. An NA is reported for any gene symbol that cannot be mapped to any manufacturer identifiers.

This mapping includes ALL gene symbols including those which are already listed in the SYMBOL map. The SYMBOL map is meant to only list official gene symbols, while the ALIAS maps are meant to store all used symbols.

Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14

See Also

- AnnotationDb-class for use of the select() interface.

Examples

```r
# Get the first one
xx[[1]]
```

```r
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
# Convert the object to a list
xx <- as.list(porcineALIAS2PROBE)
if(length(xx) > 0){
  # Get the probe identifiers for the first two aliases
  xx[1:2]
  # Get the first one
  xx[[1]]
}
Description

Welcome to the porcine.db annotation Package. The purpose of this package is to provide detailed information about the porcine platform. This package is updated biannually.

Objects in this package are accessed using the select() interface. See ?select in the AnnotationDbi package for details.

See Also

- AnnotationDb-class for use of keys(), columns() and select().

Examples

```r
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.
columns(porcine.db)

## Bimap interface:
## The 'old style' of interacting with these objects is manipulation as
## bimaps. While this approach is still available we strongly encourage the
## use of select().
ls("package:porcine.db")
```

Description

porcineCHR is an R object that provides mappings between a manufacturer identifier and the chromosome that contains the gene of interest.

Details

Each manufacturer identifier maps to a vector of chromosomes. Due to inconsistencies that may exist at the time the object was built, the vector may contain more than one chromosome (e.g., the identifier may map to more than one chromosome). If the chromosomal location is unknown, the vector will contain an NA.

Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14
See Also

• AnnotationDb-class for use of the select() interface.

Examples

```r
# select() interface:
# Objects in this package can be accessed using the select() interface
# from the AnnotationDbi package. See ?select for details.

# Bimap interface:
x <- porcineCHR
# Get the probe identifiers that are mapped to a chromosome
mapped_probes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0) {
  # Get the CHR for the first five probes
  xx[1:5]
  # Get the first one
  xx[[1]]
}
```

porcineENTREZID  Map between Manufacturer Identifiers and Entrez Gene

Description

porcineENTREZID is an R object that provides mappings between manufacturer identifiers and Entrez Gene identifiers.

Details

Each manufacturer identifier is mapped to a vector of Entrez Gene identifiers. An NA is assigned to those manufacturer identifiers that can not be mapped to an Entrez Gene identifier at this time.

If a given manufacturer identifier can be mapped to different Entrez Gene identifiers from various sources, we attempt to select the common identifiers. If a consensus cannot be determined, we select the smallest identifier.

Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14

References


See Also

• AnnotationDb-class for use of the select() interface.
**porcineENZYME**

Maps between Manufacturer IDs and Enzyme Commission (EC) Numbers

Description

`porcineENZYME` is an R object that provides mappings between manufacturer identifiers and EC numbers. `porcineENZYME2PROBE` is an R object that maps Enzyme Commission (EC) numbers to manufacturer identifiers.

Details

When the `porcineENZYME` mapping viewed as a list, each manufacturer identifier maps to a named vector containing the EC number that corresponds to the enzyme produced by that gene. The names correspond to the manufacturer identifiers. If this information is unknown, the vector will contain an NA.

For the `porcineENZYME2PROBE`, each EC number maps to a named vector containing all of the manufacturer identifiers that correspond to the gene that produces that enzyme. The name of the vector corresponds to the EC number.

Enzyme Commission numbers are assigned by the Nomenclature Committee of the International Union of Biochemistry and Molecular Biology [http://www.chem.qmw.ac.uk/iubmb/enzyme/](http://www.chem.qmw.ac.uk/iubmb/enzyme/) to allow enzymes to be identified.

An Enzyme Commission number is of the format EC x.y.z.w, where x, y, z, and w are numeric numbers. In `porcineENZYME2PROBE`, EC is dropped from the Enzyme Commission numbers.

Enzyme Commission numbers have corresponding names that describe the functions of enzymes in such a way that EC x is a more general description than EC x.y that in turn is a more general description than EC x.y.z. The top level EC numbers and names are listed below:

EC 1 oxidoreductases
porcineENZYME

EC 2 transferases
EC 3 hydrolases
EC 4 lyases
EC 5 isomerases
EC 6 ligases

The EC name for a given EC number can be viewed at http://www.chem.qmul.ac.uk/iupac/jcbn/index.html#6

Mappings between probe identifiers and enzyme identifiers were obtained using files provided by: KEGG GENOME ftp://ftp.genome.jp/pub/kegg/genomes With a date stamp from the source of: 2011-Mar15

References


See Also

• AnnotationDb-class for use of the select() interface.

Examples

```r
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
x <- porcineENZYME
# Get the probe identifiers that are mapped to an EC number
mapped_probes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_probes][1:3])
if(length(xx) > 0) {
  # Get the ENZYME for the first five probes
  xx[1:5]
  # Get the first one
  xx[[1]]
}

# Now convert porcineENZYME2PROBE to a list to see inside
x <- porcineENZYME2PROBE
mapped_probes <- mappedkeys(x)
## convert to a list
xx <- as.list(x[mapped_probes][1:3])
if(length(xx) > 0){
  # Get the probe identifiers for the first five enzyme
  #commission numbers
  xx[1:5]
  # Get the first one
  xx[[1]]
}
```
Description

porcineGENENAME is an R object that maps manufacturer identifiers to the corresponding gene name.

Details

Each manufacturer identifier maps to a named vector containing the gene name. The vector name corresponds to the manufacturer identifier. If the gene name is unknown, the vector will contain an NA.

Gene names currently include both the official (validated by a nomenclature committee) and preferred names (interim selected for display) for genes. Efforts are being made to differentiate the two by adding a name to the vector.

Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14

See Also

- AnnotationDb-class for use of the select() interface.

Examples

```r
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
x <- porcineGENENAME
# Get the probe identifiers that are mapped to a gene name
mapped_probes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0) {
  # Get the GENENAME for the first five probes
  xx[[1:5]]
  # Get the first one
  xx[[1]]
}
porcineGO

Maps between manufacturer IDs and Gene Ontology (GO) IDs

**Description**

porcineGO is an R object that provides mappings between manufacturer identifiers and the GO identifiers that they are directly associated with. This mapping and its reverse mapping (porcineGO2PROBE) do NOT associate the child terms from the GO ontology with the gene. Only the directly evidenced terms are represented here.

porcineGO2ALLPROBES is an R object that provides mappings between a given GO identifier and all of the manufacturer identifiers annotated at that GO term OR TO ONE OF IT’S CHILD NODES in the GO ontology. Thus, this mapping is much larger and more inclusive than porcineGO2PROBE.

**Details**

If porcineGO is cast as a list, each manufacturer identifier is mapped to a list of lists. The names on the outer list are GO identifiers. Each inner list consists of three named elements: GOID, Ontology, and Evidence.

The GOID element matches the GO identifier named in the outer list and is included for convenience when processing the data using 'lapply'.

The Ontology element indicates which of the three Gene Ontology categories this identifier belongs to. The categories are biological process (BP), cellular component (CC), and molecular function (MF).

The Evidence element contains a code indicating what kind of evidence supports the association of the GO identifier to the manufacturer id. Some of the evidence codes in use include:

- IMP: inferred from mutant phenotype
- IGI: inferred from genetic interaction
- IPI: inferred from physical interaction
- ISS: inferred from sequence similarity
- IDA: inferred from direct assay
- IEP: inferred from expression pattern
- IEA: inferred from electronic annotation
- TAS: traceable author statement
- NAS: non-traceable author statement
- ND: no biological data available
- IC: inferred by curator

A more complete listing of evidence codes can be found at:


If porcineGO2ALLPROBES or porcineGO2PROBE is cast as a list, each GO term maps to a named vector of manufacturer identifiers and evidence codes. A GO identifier may be mapped to the same manufacturer identifier more than once but the evidence code can be different. Mappings
between Gene Ontology identifiers and Gene Ontology terms and other information are available in a separate data package named GO.

Whenever any of these mappings are cast as a data.frame, all the results will be output in an appropriate tabular form.

Mappings between manufacturer identifiers and GO information were obtained through their mappings to manufacturer identifiers. NAs are assigned to manufacturer identifiers that can not be mapped to any Gene Ontology information. Mappings between Gene Ontology identifiers an Gene Ontology terms and other information are available in a separate data package named GO.

All mappings were based on data provided by: Gene Ontology http://current.geneontology.org/ontology/go-basic.obo With a date stamp from the source of: 2021-02-01

References


See Also

• porcineGO2ALLPROBES
• AnnotationDb-class for use of the select() interface.

Examples

## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
x <- porcineGO
# Get the manufacturer identifiers that are mapped to a GO ID
mapped_genes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_genes][1:300])
if(length(xx) > 0) {
  # Try the first one
got <- xx[[1]]
got[[1]]["GOID"]
got[[1]]["Ontology"]
got[[1]]["Evidence"]
}

# For the reverse map:
x <- porcineGO2PROBE
mapped_genes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_genes][1:300])
if(length(xx) > 0){
  # Gets the manufacturer ids for the top 2nd and 3nd GO identifiers
goids <- xx[2:3]
  # Gets the manufacturer ids for the first element of goids
goids[[1]]
  # Evidence code for the mappings
names(goids[[1]])
}

x <- porcineGO2ALLPROBES
mapped_genes <- mappedkeys(x)
# Convert porcineGO2ALLPROBES to a list
xx <- as.list(x[mapped_genes][1:300])
if(length(xx) > 0){
  # Gets the manufacturer identifiers for the top 2nd and 3nd GO identifiers
goids <- xx[2:3]
  # Gets all the manufacturer identifiers for the first element of goids
goids[[1]]
  # Evidence code for the mappings
  names(goids[[1]])
}

****

porcineMAPCOUNTS	Number of mapped keys for the maps in package porcine.db

**Description**

DEPRECATED. Counts in the MAPCOUNT table are out of sync and should not be used.

porcineMAPCOUNTS provides the "map count" (i.e. the count of mapped keys) for each map in package porcine.db.

**Details**

DEPRECATED. Counts in the MAPCOUNT table are out of sync and should not be used.

This "map count" information is precalculated and stored in the package annotation DB. This allows some quality control and is used by the checkMAPCOUNTS function defined in AnnotationDbi to compare and validate different methods (like count.mappedkeys(x) or sum(!is.na(as.list(x)))) for getting the "map count" of a given map.

****

porcineORGANISM	The Organism information for porcine

**Description**

porcineORGANISM is an R object that contains a single item: a character string that names the organism for which porcine was built. porcineORGPKG is an R object that contains a character vector with the name of the organism package that a chip package depends on for its gene-centric annotation.
Details

Although the package name is suggestive of the organism for which it was built, porcineORGAN-ISM provides a simple way to programmatically extract the organism name. porcineORGPKG provides a simple way to programmatically extract the name of the parent organism package. The parent organism package is a strict dependency for chip packages as this is where the gene centric information is ultimately extracted from. The full package name will always be this string plus the extension ".db". But most programatic acces will not require this extension, so its more convenient to leave it out.

See Also

- AnnotationDb-class for use of the select() interface.

Examples

```r
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
porcineORGANISM
porcineORGPKG
```

---

### Description

KEGG (Kyoto Encyclopedia of Genes and Genomes) maintains pathway data for various organisms.

porcinePATH maps probe identifiers to the identifiers used by KEGG for pathways in which the genes represented by the probe identifiers are involved

porcinePATH2PROBE is an R object that provides mappings between KEGG identifiers and manufacturer identifiers.

### Details

Each KEGG pathway has a name and identifier. Pathway name for a given pathway identifier can be obtained using the KEGG data package that can either be built using AnnBuilder or downloaded from Bioconductor [http://www.bioconductor.org](http://www.bioconductor.org).


Mappings were based on data provided by: KEGG GENOME ftp://ftp.genome.jp/pub/kegg/genomes With a date stamp from the source of: 2011-Mar15
References

http://www.genome.ad.jp/kegg/

See Also

• AnnotationDb-class for use of the select() interface.

Examples

## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:

x <- porcinePATH
# Get the probe identifiers that are mapped to a KEGG pathway ID
mapped_probes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0) {
  # Get the PATH for the first five probes
  xx[1:5]
  # Get the first one
  xx[[1]]
}

x <- porcinePATH
mapped_probes <- mappedkeys(x)
# Now convert the porcinePATH2PROBE object to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0){
  # Get the probe identifiers for the first two pathway identifiers
  xx[1:2]
  # Get the first one
  xx[[1]]
}

porcinePMID

Maps between Manufacturer Identifiers and PubMed Identifiers

Description

porcinePMID is an R object that provides mappings between manufacturer identifiers and PubMed identifiers. porcinePMID2PROBE is an R object that provides mappings between PubMed identifiers and manufacturer identifiers.
Details

When porcinePMID is viewed as a list each manufacturer identifier is mapped to a named vector of PubMed identifiers. The name associated with each vector corresponds to the manufacturer identifier. The length of the vector may be one or greater, depending on how many PubMed identifiers a given manufacturer identifier is mapped to. An NA is reported for any manufacturer identifier that cannot be mapped to a PubMed identifier.

When porcinePMID2PROBE is viewed as a list each PubMed identifier is mapped to a named vector of manufacturer identifiers. The name represents the PubMed identifier and the vector contains all manufacturer identifiers that are represented by that PubMed identifier. The length of the vector may be one or longer, depending on how many manufacturer identifiers are mapped to a given PubMed identifier.

Titles, abstracts, and possibly full texts of articles can be obtained from PubMed by providing a valid PubMed identifier. The pubmed function of annotate can also be used for the same purpose.

Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14

References


See Also

- AnnotationDb-class for use of the select() interface.

Examples

```r
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
x <- porcinePMID
# Get the probe identifiers that are mapped to any PubMed ID
mapped_probes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0){
  # Get the PubMed identifiers for the first two probe identifiers
  xx[1:2]
  # Get the first one
  xx[[1]]
  if(interactive() && !is.null(xx[[1]]) && !is.na(xx[[1]])
      && require(annotate)){
    # Get article information as XML files
    xmls <- pubmed(xx[[1]], disp = "data")
    # View article information using a browser
    pubmed(xx[[1]], disp = "browser")
  }
}
```
```
x <- porcinePMID2PROBE
mapped_probes <- mappedkeys(x)
# Now convert the reverse map object porcinePMID2PROBE to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0){
  # Get the probe identifiers for the first two PubMed identifiers
  xx[1:2]
  # Get the first one
  xx[[1]]
  if(interactive() && require(annotate)){
    # Get article information as XML files for a PubMed id
    xmls <- pubmed(names(xx)[1], disp = "data")
    # View article information using a browser
    pubmed(names(xx)[1], disp = "browser")
  }
}
```

---

**porcineREFSEQ**

*Map between Manufacturer Identifiers and RefSeq Identifiers*

**Description**

porcineREFSEQ is an R object that provides mappings between manufacturer identifiers and RefSeq identifiers.

**Details**

Each manufacturer identifier is mapped to a named vector of RefSeq identifiers. The name represents the manufacturer identifier and the vector contains all RefSeq identifiers that can be mapped to that manufacturer identifier. The length of the vector may be one or greater, depending on how many RefSeq identifiers a given manufacturer identifier can be mapped to. An NA is reported for any manufacturer identifier that cannot be mapped to a RefSeq identifier at this time.

RefSeq identifiers differ in format according to the type of record the identifiers are for as shown below:

- **NG\_XXXXX**: RefSeq accessions for genomic region (nucleotide) records
- **NM\_XXXXX**: RefSeq accessions for mRNA records
- **NC\_XXXXX**: RefSeq accessions for chromosome records
- **NP\_XXXXX**: RefSeq accessions for protein records
- **XR\_XXXXX**: RefSeq accessions for model RNAs that are not associated with protein products
- **XM\_XXXXX**: RefSeq accessions for model mRNA records
- **XP\_XXXXX**: RefSeq accessions for model protein records

Where XXXXX is a sequence of integers.


Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14
porcineSYMBOL

Map between Manufacturer Identifiers and Gene Symbols

Description

porcineSYMBOL is an R object that provides mappings between manufacturer identifiers and gene abbreviations.

Details

Each manufacturer identifier is mapped to an abbreviation for the corresponding gene. An NA is reported if there is no known abbreviation for a given gene.

Symbols typically consist of 3 letters that define either a single gene (ABC) or multiple genes (ABC1, ABC2, ABC3). Gene symbols can be used as key words to query public databases such as Entrez Gene.

Mappings were based on data provided by: Entrez Gene ftp://ftp.ncbi.nlm.nih.gov/gene/DATA With a date stamp from the source of: 2021-Apr14

References

porcineUNIPROT

Map Uniprot accession numbers with Entrez Gene identifiers

Description

porcineUNIPROT is an R object that contains mappings between the manufacturer identifiers and Uniprot accession numbers.

Details

This object is a simple mapping of manufacturer identifiers to Uniprot Accessions. Mappings were based on data provided by NCBI (link above) with an exception for fly, which required retrieving the data from ensembl [http://www.ensembl.org/biomart/martview/](http://www.ensembl.org/biomart/martview/)

See Also

- **AnnotationDb-class** for use of the select() interface.

Examples

```
## select() interface:
## Objects in this package can be accessed using the select() interface
## from the AnnotationDbi package. See ?select for details.

## Bimap interface:
x <- porcineSYMBOL
# Get the probe identifiers that are mapped to a gene symbol
mapped_probes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_probes][1:300])
if(length(xx) > 0) {
  # Get the SYMBOL for the first five probes
  xx[1:5]
  # Get the first one
  xx[[1]]
}
```
```r
mapped_genes <- mappedkeys(x)
# Convert to a list
xx <- as.list(x[mapped_genes][1:300])
if(length(xx) > 0) {
  # Get the Uniprot IDs for the first five genes
  xx[1:5]
  # Get the first one
  xx[[1]]
}
```

---

**porcine_dbconn**

Collect information about the package annotation DB

**Description**

Some convenience functions for getting a connection object to (or collecting information about) the package annotation DB.

**Usage**

```r
porcine_dbconn()
porcine_dbfile()
porcine_dbschema(file=", show.indices=FALSE)
porcine_dbInfo()
```

**Arguments**

- `file` A connection, or a character string naming the file to print to (see the `file` argument of the `cat` function for the details).
- `show.indices` The CREATE INDEX statements are not shown by default. Use `show.indices=TRUE` to get them.

**Details**

- `porcine_dbconn` returns a connection object to the package annotation DB. IMPORTANT: Don’t call `dbDisconnect` on the connection object returned by `porcine_dbconn` or you will break all the `AnnDbObj` objects defined in this package!
- `porcine_dbfile` returns the path (character string) to the package annotation DB (this is an SQLite file).
- `porcine_dbschema` prints the schema definition of the package annotation DB.
- `porcine_dbInfo` prints other information about the package annotation DB.
Value

porcine_dbconn: a DBIConnection object representing an open connection to the package annotation DB.

porcine_dbfile: a character string with the path to the package annotation DB.

porcine_dbschema: none (invisible NULL).

porcine_dbInfo: none (invisible NULL).

See Also

`dbGetQuery`, `dbConnect`, `dbconn`, `dbfile`, `dbschema`, `dbInfo`

Examples

```r
library(DBI)
## Count the number of rows in the "probes" table:
dbGetQuery(porcine_dbconn(), "SELECT COUNT(*) FROM probes")

porcine_dbschema()

porcine_dbInfo()
```
Index

* datasets
  porcine.db, 3
  porcine_dbconn, 17
  porcineACCNUM, 1
  porcineALIAS2PROBE, 2
  porcineCHR, 3
  porcineENTREZID, 4
  porcineENZYME, 5
  porcineGENENAME, 7
  porcineGO, 8
  porcineMAPCOUNTS, 10
  porcineORGANISM, 10
  porcinePATH, 11
  porcinePMID, 12
  porcineREFSEQ, 14
  porcineSYMBOL, 15
  porcineUNIPROT, 16

* utilities
  porcine_dbconn, 17
  AnnDbObj, 17
  cat, 17
  checkMAPCOUNTS, 10
  dbconn, 18
  dbConnect, 18
  dbDisconnect, 17
  dbfile, 18
  dbGetQuery, 18
  dbInfo, 18
  dbschema, 18
  porcine (porcine.db), 3
  porcine.db, 3
  porcine_dbconn, 17
  porcine_dbfile (porcine_dbconn), 17
  porcine_dbInfo (porcine_dbconn), 17
  porcine_dbschema (porcine_dbconn), 17
  porcineACCNUM, 1
  porcineALIAS2PROBE, 2
  porcineCHR, 3
  porcineENTREZID, 4
  porcineENZYME, 5
  porcineENZYME2PROBE (porcineENZYME), 5
  porcineGENENAME, 7
  porcineGO, 8
  porcineGO2ALLPROBES, 9
  porcineGO2ALLPROBES (porcineGO), 8
  porcineGO2PROBE (porcineGO), 8
  porcineLOCUSID (porcineENTREZID), 4
  porcineMAPCOUNTS, 10
  porcineORGANISM, 10
  porcineORGPKG (porcineORGANISM), 10
  porcinePATH, 11
  porcinePATH2PROBE (porcinePATH), 11
  porcinePMID, 12
  porcinePMID2PROBE (porcinePMID), 12
  porcineREFSEQ, 14
  porcineSYMBOL, 15
  porcineUNIPROT, 16
  porcineUNIPROT2PROBE (porcineUNIPROT), 16