Package ‘annaffy’

November 20, 2016

Version  1.46.0
Date     2010-12-29
Title    Annotation tools for Affymetrix biological metadata
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Depends  R (>= 2.5.0), methods, Biobase, GO.db, KEGG.db
Imports  AnnotationDbi (>= 0.1.15), DBI
Suggests hgu95av2.db, multtest, tcltk
Description Functions for handling data from Bioconductor Affymetrix
annotation data packages. Produces compact HTML and text
reports including experimental data and URL links to many
online databases. Allows searching biological metadata using
various criteria.
License   LGPL
LazyLoad  yes
biocViews OneChannel, Microarray, Annotation, GO, Pathways,
             ReportWriting
NeedsCompilation no

R topics documented:

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Handle fetching annotation data columns

Description

Dispatches requests for annotation data to the correct function. Alternatively returns a list of all the columns it supports.

Usage

aaf.handler(probeids, chip, name)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>probeids</td>
<td>character vector containing probe ids</td>
</tr>
<tr>
<td>chip</td>
<td>name of chip</td>
</tr>
<tr>
<td>name</td>
<td>name of the column of data to return</td>
</tr>
</tbody>
</table>
Value
An aafList containing objects of the proper class.
If no arguments are passed, it will return a character vector of the columns currently supported.

Note
Written at the NASA Center for Computational Astrobiology
http://cca.arc.nasa.gov/

Author(s)
Colin A. Smith, <annaffy@colinsmith.org>

---

**Description**
For the given probeids, constructs an aafList of aafChromLoc objects containing annotation data from the chip data package.

**Usage**
aafChromLoc(probeids, chip)

**Arguments**
<table>
<thead>
<tr>
<th>probeids</th>
<th>character vector containing probe ids</th>
</tr>
</thead>
<tbody>
<tr>
<td>chip</td>
<td>name of the chip data package</td>
</tr>
</tbody>
</table>

**Value**
An aafList of aafChromLoc objects. NA values are returned as empty objects.

**Author(s)**
Colin A. Smith, <annaffy@colinsmith.org>

**See Also**
aafChromLoc-class

**Examples**
```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  locations <- aafChromLoc(probes, "hgu95av2.db")
  show(locations[6:10])
}
```
aafChromosome

### aafChromLoc-class

**Class aafChromLoc, a class for gene chromosome locations**

#### Description

An abstraction for gene chromosome locations from Bioconductor data packages.

#### Objects from the Class

Objects are generally created by the `aafChromLoc` constructor. Objects can also be created manually by calls of the form `new("aafChromLoc", description)`.

#### Slots

- `.Data`: Object of class `integer`

#### Extends

Class `integer`, from data part.

#### Methods

No methods defined with class "aafChromLoc" in the signature. See generic implementations of `getText`, `getURL`, `getHTML`, `getTD`, and `getCSS`.

#### Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

#### See Also

- `aafChromLoc`

### aafChromosome

**Constructor for aafChromosome objects**

#### Description

For the given `probeids`, constructs an `aafList` of `aafChromosome` objects containing annotation data from the `chip` data package.

#### Usage

`aafChromosome(probeids, chip)`

#### Arguments

- `probeids`: character vector containing probe ids
- `chip`: name of the chip data package
aafChromosome-class

Value
An aafList of aafChromosome objects. NA values are returned as empty objects.

Author(s)
Colin A. Smith, <annaffy@colinsmith.org>

See Also
aafChromosome-class

Examples
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  chromosomes <- aafChromosome(probes, "hgu95av2.db")
  show(chromosomes[6:10])
}

---

aafChromosome-class Class aafChromosome, a class for gene chromosome assignments

Description
An abstraction for gene chromosome assignments from Bioconductor data packages.

Objects from the Class
Objects are generally created by the aafChromosome constructor. Objects can also be created manually by calls of the form new("aafChromosome", description).

Slots
.Data: Object of class character

Extends
Class character, from data part.

Methods
No methods defined with class "aafChromosome" in the signature. See generic implementations of getText, getURL, getHTML, getTD, and getCSS.

Author(s)
Colin A. Smith, <annaffy@colinsmith.org>

See Also
aafChromosome
aafCytoband-class

Constructor for aafCytoband objects

Description
For the given probeids, constructs an aafList of aafCytoband objects containing annotation data from the chip data package.

Usage
aafCytoband(probeids, chip)

Arguments
probeids character vector containing probe ids
chip name of the chip data package

Value
An aafList of aafCytoband objects. NA values are returned as empty objects.

Author(s)
Colin A. Smith, <annaffy@colinsmith.org>

See Also
aafCytoband-class

Examples
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  bands <- aafCytoband(probes, "hgu95av2.db")
  show(bands[6:10])
}

aafCytoband-class

Class aafCytoband, a class for cytoband data

Description
An abstraction for cytoband data from Bioconductor data packages.

Objects from the Class
Objects are generally created by the aafCytoband constructor. Objects can also be created manually by calls of the form new("aafCytoband", band, genbank).
Slots

- `band`: Object of class `character` containing genomic cytoband
- `gene`: Object of class `character` containing containing Gene ID

Methods

- `getText` (aafCytoband): Returns text of band.
- `getURL` (aafCytoband): Returns a URL corresponding entry in NCBI’s cytoband map viewer.
  See generic implementations of `getHTML`, `getTD`, and `getCSS`.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

- `aafCytoband`

---

`aafDescription`  
*Constructor for aafDescription objects*

**Description**

For the given `probeids`, constructs an `aafList` of `aafDescription` objects containing annotation data from the chip data package.

**Usage**

```r
aafDescription(probeids, chip)
```

**Arguments**

- `probeids`: character vector containing probe ids
- `chip`: name of the chip data package

**Value**

An `aafList` of `aafDescription` objects. NA values are returned as empty objects.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

- `aafDescription-class`
Examples

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  descriptions <- aafDescription(probes, "hgu95av2.db")
  show(descriptions[6:10])
}
```

**aafDescription-class**  
Class *aafDescription*, a class for gene descriptions

**Description**

An abstraction for gene description from Bioconductor data packages.

**Objects from the Class**

Objects are generally created by the `aafDescription` constructor. Objects can also be created manually by calls of the form `new("aafDescription", description)`.

**Slots**

- `.Data`: Object of class `character`

**Extends**

Class `character`, from data part.

**Methods**

No methods defined with class "aafDescription" in the signature. See generic implementations of `getText`, `getURL`, `getHTML`, and `getTD`.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

`aafDescription`
Sample ExpressionSet used for demonstration purposes

Description

Contains expression values for 250 probe ids with 8 samples. Two covariates are provided. Expression comes from the hgu95av2 chip.

Details

The data is real but anonymized. 250 genes expression values were chosen at random from an existing ExpressionSet. Another 250 probe ids were selected at random and were assigned to the expression values. That way, expression values do not correspond to the true probe ids.

Post-processing was done with rma() in affy 1.2.23.

Constructor for aafGenBank objects

Description

For the given probeids, constructs an aafList of aafGenBank objects containing annotation data from the chip data package.

Usage

aafGenBank(probeids, chip)

Arguments

probeids character vector containing probe ids
chip name of the chip data package

Value

An aafList of aafGenBank objects. NA values are returned as empty objects.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafGenBank-class

Examples

if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  gbs <- aafGenBank(probes, "hgu95av2.db")
  show(gbs[6:10])
}
Class aafGenBank, a class for GenBank accession numbers

Description
An abstraction for GenBank accession numbers from Bioconductor data packages.

Objects from the Class
Objects are generally created by the `aafGenBank` constructor. Objects can also be created manually by calls of the form `new("aafGenBank", accnum)`.

Slots
- `.Data`: Object of class character

Extends
Class character, from data part.

Methods
- `getURL` (aafGenBank): Returns a URL to the corresponding entry in NCBI’s GenBank database. See generic implementations of `getText`, `getHTML`, and `getTD`.

Author(s)
Colin A. Smith, <annaffy@colinsmith.org>

See Also
- `aafGenBank`
aafGO-class

Value

An aafList of aafGO objects. NA values are returned as empty objects.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafGO-class

Examples

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  gos <- aafGO(probes, "hgu95av2.db")
  show(gos[6:10])
}
```

---

aafGO-class

Class aafGO, a class for gene ontology ids

Description

An abstraction for gene ontology ids from Bioconductor data packages. This class is actually extends aafList and holds aafGOItem objects which have the actual annotation data.

Objects from the Class

Objects are generally created by the aafGO constructor. Objects can also be created manually by calls of the form `new("aafGO", list(goitems))`.

Slots

`Data`: Object of class list

Extends

Class aafList, from data part.

Methods

- `getText` (aafGO): Returns a comma delimited list of the individual aafGOItem objects.
- `getURL` (aafGO): Returns a single URL to an AmiGO page which displays all the gene ontology identifiers in an hierarchical listing.
- `getHTML` (aafGO): Returns an HTML representation of each of the individual aafGOItem objects, concatenated together.
- `getTD` (aafGO): Returns an HTML table cell representation with the class set to "aafGO".
- `getCSS` (aafGOItem): Returns a line of CSS that indents GOItem paragraphs.
Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafGO, aafGOItem, aafList

---

**aafGOItem-class**  
*Class aafGOItem, a class for gene ontology id elements*

**Description**

An abstraction for gene ontology id elements from Bioconductor data packages. Multiple instances of this class are held by the wrapper class aafGO.

**Objects from the Class**

Objects are generally created by the `aafGO` constructor. Objects can also be created manually by calls of the form `new("aafGOItem", id, name, type)`.

**Slots**

- `id`: Object of class character containing GO id  
- `name`: Object of class character containing textual name  
- `type`: Object of class character containing GO subtype  
- `evid`: Object of class character containing GO evidence code

**Methods**

- `getText` (aafGOItem): Returns textual representation formatted "id: name".  
- `getURL` (aafGOItem): Returns a URL to the corresponding gene ontology entry on AmiGO.  
- `getHTML` (aafGOItem): Returns an HTML representation including the URL link, gene ontology name, and rollover subtype.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafGO-class, aafGO
**aafIntensity-class**

Class `aafIntensity`, a class for gene expression values

---

**Description**

A class for displaying gene expression values with a green background of differing intensities.

**Objects from the Class**

Objects are generally created by the `aafTableInt` constructor. Objects can also be created manually by calls of the form `new("aafIntensity", intensity)`.

**Slots**

`.Data`: Object of class `numeric`

**Extends**

Class `numeric`, from data part.

**Methods**

`getTD` (aafIntensity): Returns an HTML table cell with background varying from white to green depending on intensity. Scaling is controlled by two options, `minIntensity` (fully white) and `maxIntensity` (fully green), usually set by `writeHTML`.

See generic implementations of `getText`, `getURL`, `getHTML`, and `getCSS`.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

`aafTableInt`

---

**aafList-class**

Class `aafList`, a specialized subclass of `list`

---

**Description**

A class for lists of annotation data objects.

**Objects from the Class**

Objects are generally created by any of the annotation data constructors that are also part of this package. Objects can also be created manually by calls of the form `new("aafList", list)`.

**Slots**

`.Data`: Object of class `list`
aafLocusLink

Extends

Class list, from data part.

Methods

getText (aafList): Returns a character vector containing textual representations of every item.
getUrl (aafList): Returns a character vector containing single URLs (if possible) of every item.
getHTML (aafList): Returns a character vector containing HTML representations of every item.
getTD (aafList): Returns a character vector containing HTML table cell representations of every item.
getCSS (aafList): Returns getCSS() of the first item in the list.
[ (aafList): Returns a subset of aafList as another aafList object.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

modularObject

Constructor for aafLocusLink objects

Description

For the given probeids, constructs an aafList of aafLocusLink objects containing annotation data from the chip data package.

Usage

aafLocusLink(probeids, chip)

Arguments

probeids character vector containing probe ids
chip name of the chip data package

Value

An aafList of aafLocusLink objects. NA values are returned as empty objects.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafLocusLink-class
Examples

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  lls <- aafLocusLink(probes, "hgu95av2.db")
  show(lls[6:10])
}
```

---

**aafLocusLink-class**

Class `aafLocusLink`, a class for LocusLink ids

**Description**

An abstraction for LocusLink ids from Bioconductor data packages.

**Objects from the Class**

Objects are generally created by the `aafLocusLink` constructor. Objects can also be created manually by calls of the form `new("aafLocusLink", id)`.

**Slots**

- `.Data`: Object of class `integer`

**Extends**

Class `integer`, from data part.

**Methods**

- `getURL` (aafLocusLink): Returns a URL to the corresponding entry in NCBI’s LocusLink database. On the rare chance that more than one id is defined, more than one URL will be returned.

See generic implementations of `getText`, `getHTML`, and `getTD`.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

- `aafLocusLink`
**aafPathway-class**

**Description**

For the given `probeids`, constructs an `aafList` of `aafPathway` objects containing annotation data from the chip data package.

**Usage**

`aafPathway(probeids, chip)`

**Arguments**

- `probeids` character vector containing probe ids
- `chip` name of the chip data package

**Value**

An `aafList` of `aafPathway` objects. NA values are returned as empty objects.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

`aafPathway-class`

**Examples**

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  pathways <- aafPathway(probes, "hgu95av2.db")
  show(pathways[6:10])
}
```

**aafPathway-class**

**Class aafPathway, a class for KEGG pathway ids**

**Description**

An abstraction for KEGG pathway ids from Bioconductor data packages. This class is actually extends `aafList` and holds `aafPathwayItem` objects which have the actual annotation data.

**Objects from the Class**

Objects are generally created by the `aafPathway` constructor. Objects can also be created manually by calls of the form `new("aafPathway", list(pathwayitems)).

```r
```
**Slots**

- **.Data**: Object of class `list`

**Extends**

Class `aafList`, from data part.

**Methods**

- **getText**  (aafGO): Returns a comma delimited list of the individual `aafPathwayItem` objects.
- **getURL**  (aafGO): Returns zero length character vector because this method is not valid for this class.
- **getHTML**  (aafGO): Returns an HTML representation of each of the individual `aafPathwayItem` objects, concatenated together.
- **getTD**  (aafGO): Returns an HTML table cell representation with the class set to "aafPathway".
- **getCSS**  (aafGO): Returns a line of CSS which intends PathwayItem paragraphs.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

`aafPathway`, `aafPathwayItem`, `aafList`

---

**Class `aafPathwayItem`, a class for KEGG pathway id elements**

**Description**

An abstraction for KEGG pathway id elements from Bioconductor data packages. Multiple instances of this class are held by the wrapper class `aafPathway`.

**Objects from the Class**

Objects are generally created by the `aafPathway` constructor. Objects can also be created manually by calls of the form `new("aafPathwayItem", id, name, enzyme)`.

**Slots**

- **id**: Object of class character containing KEGG pathway id
- **name**: Object of class character containing textual name
- **enzyme**: Object of class character containing the Enzyme Commission number if applicable

**Methods**

- **getText**  (aafPathwayItem): Returns textual representation formatted "id: name".
- **getURL**  (aafPathwayItem): Returns a URL to the corresponding entry in the Kyoto Encyclopedia of Genes and Genomes database. If there is a corresponding EC number, it will be highlighted in red.
- **getHTML**  (aafPathwayItem): Returns an HTML representation including the URL link and pathway name.
**aafProbe**

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

`aafPathway-class, aafPathway`

---

### aafProbe

**Constructor for aafProbe objects**

---

**Description**

For the given `probeids`, constructs an `aafList` of `aafProbe` objects.

**Usage**

```r
aafProbe(probeids)
```

**Arguments**

- `probeids` character vector containing probe ids

**Value**

An `aafList` of `aafProbe` objects.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

`aafProbe-class`

**Examples**

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  probesets <- aafProbe(probes)
  getURL(probesets[6:10])
}
```
**aafProbe-class**

### Description

An abstraction for Affymetrix ProbeSet ids.

### Objects from the Class

Objects are generally created by the `aafProbe` constructor. Objects can also be created manually by calls of the form `new("aafProbe", id)`.

### Slots

- `.Data`: Object of class character

### Extends

Class character, from data part.

### Methods

- `getURL` (aafProbe): Returns a URL to the annotation found in the Affymetrix NetAffx Analysis Center.
  
  See generic implementations of `getText`, `getHTML`, and `getTD`.

### Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

### See Also

- `aafProbe`

---

**aafPubMed**

### Description

For the given `probeids`, constructs a list of `aafPubMed` objects containing annotation data from the chip data package.

### Usage

```r
aafPubMed(probeids, chip)
```

### Arguments

- `probeids`: character vector containing probe ids
- `chip`: name of the chip data package
Value

An aafList of aafPubMed objects. NA values are returned as empty objects.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafPubMed-class

Examples

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  pmids <- aafPubMed(probes, "hgu95av2.db")
  show(pmids[6:10])
}
```

---

### aafPubMed-class

**Class aafPubMed, a class for PubMed ids**

Description

An abstraction for LocusLink ids from Bioconductor data packages.

Objects from the Class

Objects are generally created by the `aafPubMed` constructor. Objects can also be created manually by calls of the form `new("aafPubMed", id)`.

Slots

- `.Data`: Object of class integer

Extends

Class integer, from data part.

Methods

- `getHTML` (aafPubMed): Returns an HTML link along with the number of abstracts.
- `getTD` (aafPubMed): Returns an HTML table cell representation with the class set to "aafPubMed".
- `getCSS` (aafPubMed): Returns a line of CSS which centers the PubMed link.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>
See Also

aafPubMed

---

**aafSearchGO**  
*Find probe ids corresponding to GO ids*

**Description**

Searches Gene Ontology ids for corresponding probe ids in a given chip, optionally including descendents.

**Usage**

```r
aafSearchGO(chip, ids, descendents = TRUE, logic = "OR")
```

**Arguments**

- `chip`  
  - name of the chip data package
- `ids`  
  - numeric or character vector of GO ids
- `descendents`  
  - logical, include GO descendents?
- `logic`  
  - type of logic to use, "AND" or "OR"

**Value**

A character vector of probe ids matching the search criteria.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafSearchText

---

**aafSearchText**  
*Search metadata annotation text*

**Description**

Searches Bioconductor metadata annotation package text for specific strings or Perl compatible regular expressions.

**Usage**

```r
aafSearchText(chip, colnames, text, logic = "OR")
```
aafSigned-class

Arguments

- **chip**: name of the chip data package
- **colnames**: character vector of metadata column names to search
- **text**: character vector of strings/regular expressions to match
- **logic**: type of logic to use, "AND" or "OR"

Value

A character vector of probe ids matching the search criteria.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

- aafSearchGO

Examples

```r
if (require(hgu95av2.db)) {
  aafSearchText("hgu95av2.db", "Description", c("kinase", "interferon"))
  # aafSearchText("hgu95av2.db", c("Gene Ontology", "Pathway"), "ribosome")
}
```

---

**aafSigned-class**  
*Class aafSigned, a class for signed numerical data*

Description

A class for displaying signed numerical data with different styles depending on the sign.

Objects from the Class

Objects are generally created by the `aafTable` constructor. Objects can also be created manually by calls of the form `new("aafSigned", signedval)`.

Slots

- `.Data`: Object of class numeric

Extends

Class numeric, from data part.

Methods

- **getTD** (aafSigned): Returns an HTML table cell with class differentially set based on sign. `aafSignedPos` is used for positive values. `aafSignedNeg` is used for negative values. `aafSignedZero` is used for zero values.
- **getCSS** (aafSigned): Returns two lines of CSS that set the cell background of positive values light blue and negative values light red.

See generic implementations of `getText`, `getURL`, and `getHTML`. 
**aafSymbol**

**Author(s)**
Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

*aafTable*

---

**aafSymbol**  
*Constructor for aafSymbol objects*

**Description**

For the given probeids, constructs a list of aafSymbol objects containing annotation data from the chip data package.

**Usage**

`aafSymbol(probeids, chip)`

**Arguments**

- `probeids` character vector containing probe ids
- `chip` name of the chip data package

**Value**

An aafList of aafSymbol objects. NA values are returned as empty objects.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

*aafSymbol-class*

**Examples**

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  symbols <- aafSymbol(probes, "hgu95av2.db")
  show(symbols[6:10])
}
```
**aafSymbol-class**  
*Class aafSymbol, a class for gene symbols*

**Description**
An abstraction for gene symbol from Bioconductor data packages.

**Objects from the Class**
Objects are generally created by the `aafSymbol` constructor. Objects can also be created manually by calls of the form `new("aafSymbol", description)`.

**Slots**

.Data: Object of class character with gene symbol

**Extends**
Class character, from data part.

**Methods**
No methods defined with class “aafSymbol” in the signature. See generic implementations of `getText`, `getURL`, `getHTML`, and `getTD`.

**Author(s)**
Colin A. Smith, <annaffy@colinsmith.org>

**See Also**
aafSymbol

---

**aafTable**  
*Constructor for aafTable objects*

**Description**
Constructs an aafTable object given vectors, lists, or aafList objects.

**Usage**

```
aafTable(..., items = list(...), colnames = names(items),
          probeids = character(0), signed = FALSE)
```
aafTable-class

Arguments

... named arguments, one for each column
items alternatively a named list of the items to be put in the table
colnames character vector of column names
probeids character vector of probe ids associated with each row
signed boolean, should each column be colored based on the sign?

Value

An aafTable object.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafTable-class

aafTable-class

Class aafTable, a tabular microarray data class

Description

A class for storing and flexible output of microarray data to HTML and text formats.

Objects from the Class

Objects are generally created by any of the annotation table constructors that are also part of this package. Objects can also be created manually by calls of the form new("aafList", probeids, table).

Slots

probeids: Object of class character containing the probe ids for each row of the table.
table: Object of class list containing aafList objects all of the same length, representing the columns of the table. Each item in the list must have a unique name.

Methods

probeids (aafTable): Returns a character vector containing the probe ids for each row of the table.
probeids<- (aafTable): Sets the probe ids for the table rows. Can be set to character(0) if unknown or not applicable.
colnames (aafTable): Returns a character vector containing the names of the columns stored in the table.
colnames<- (aafTable): Set the column names for the table. Each must be unique.
dim (aafTable): Returns the dimensions of the table.
merge (aafTable, aafTable, all = FALSE, all.x = all, all.y = all, suffixes = c(".x",".y")): Merges two tables together, aligning common probe ids if possible. Duplicate column names are given suffixes to make them unique. Returns the merged table.
**aafTableAnn**

*Constructor for aafTable objects from annotation data*

**Description**

Constructs an aafTable object given a set of probe ids and desired annotation types.

**Usage**

```r
aafTableAnn(probeids, chip, colnames = aaf.handler(chip = chip), widget = FALSE)
```

**Arguments**

- `probeids` character vector of probe ids
- `chip` name of the data package in which the annotation data is stored
- `colnames` character vector of annotation types
- `widget` boolean, use widget to select columns?

**Value**

An aafTable object.

**rbind** (aafTable, aafTable, ...): Vertically combines tables by row. Requires that column names be identical and that all tables either have probe ids defined or not.

- Returns a subset of the table based on [row, column]. Indices may be passed as integers or probe ids/column names.

- Returns the given table column. This also supports recursive subsetting to address columns, then cells, then sub-cells (if applicable). See Extract for more information.

- Returns the given table column.

**saveHTML** (aafTable, filename, title = "Bioconductor Affymetrix Probe Listing", colnames = colnames(aafTable), range = 1:dim(aafTable)[1], open = FALSE, widget = FALSE): Saves the table to HTML with the specified filename and title. Both the columns and the range of table rows can be specified. Range can either be specified as a character vector of probe ids or an integer vector of row positions. One can also specify whether to open the resulting file in the browser and whether to use a widget for column selection.

**saveText** (aafTable, filename, header = TRUE, colnames = colnames(aafTable), range = 1:dim(aafTable)[1], widget = FALSE): Saves the table to tab delimited text with specified filename and optional header. Both the columns and the range of table rows can be specified. Range can either be specified as a character vector of probe ids or an integer vector of row positions. One can also specify whether to use a widget for column selection.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

aafTable, aafTableFrame, aafTableAnn, aafTableInt
**aafTableFrame**

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

*aafTable-class*

---

### Description

Constructs an `aafTable` object given a data frame.

### Usage

```r
aafTableFrame(frame, colnames = names(frame), probeids = row.names(frame),
               signed = FALSE)
```

### Arguments

- **frame**: data frame to be converted to the table
- **colnames**: character vector of column names
- **probeids**: character vector of probe ids associated with each row
- **signed**: boolean, should each column be colored based on the sign?

### Value

An `aafTable` object.

**Author(s)**

Colin A. Smith, <annaffy@colinsmith.org>

**See Also**

*aafTable-class*
**aafTableInt**  
*Constructor for aafTable objects from ExpressionSets*

**Description**
Constructs an aafTable object containing expression values given an ExpressionSet. In the resulting HTML table, the expression values will have backgrounds with varying intensities of green depending on the expression measure.

**Usage**
```r
aafTableInt(exprSet, colnames = sampleNames(exprSet),
             probeids = featureNames(exprSet))
```

**Arguments**
- **exprSet**: object of class ExpressionSet
- **colnames**: character vector of column names
- **probeids**: character vector of probe ids associated with each row

**Value**
An aafTable object.

**Author(s)**
Colin A. Smith, <annaffy@colinsmith.org>

**See Also**
aafTable-class, aafIntensity

---

**aafUniGene**  
*Constructor for aafUniGene objects*

**Description**
For the given probeids, constructs a list of aafUniGene objects containing annotation data from the chip data package.

**Usage**
```r
aafUniGene(probeids, chip)
```

**Arguments**
- **probeids**: character vector containing probe ids
- **chip**: name of the chip data package
Value

An aafList of aafUniGene objects. NA values are returned as empty objects.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafUniGene-class

Examples

```r
if (require(hgu95av2.db)) {
  data(aafExpr)
  probes <- featureNames(aafExpr)
  ugs <- aafUniGene(probes, "hgu95av2.db")
  show(ugs[6:10])
}
```

Description

An abstraction for UniGene cluster ids from Bioconductor data packages.

Objects from the Class

Objects are generally created by the `aafUniGene` constructor. Objects can also be created manually by calls of the form `new("aafUniGene", id)`.

Slots

.data: Object of class character

Extends

Class character, from data part.

Methods

getURL (aafUniGene): Returns a URLs to the corresponding entry in NCBI’s UniGene database. On the rare chance that more than one id is defined, more than one URL will be returned.

getHTML (aafUniGene): Returns an HTML representation with a link to the UniGene database. On the rare chance that more than one id is defined, more than one link will be returned.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>

See Also

aafUniGene
getCSS-methods

Methods for function getCSS

Description

Methods to get relevant stylesheet lines for an object.

Methods

object = ANY  Returns an empty character vector.

Note

For information about other implementations of this method, see documentation of the respective class.

See Also

aafList-class, aafPubMed-class, aafGO-class, aafPathway-class, aafSigned-class

getHTML-methods

Methods for function getHTML

Description

Methods to get an HTML representation of an object.

Methods

object = ANY  Returns text of object along with URL link if applicable. If object is floating point, it displays a fixed number of significant digits as specified by the sigfigs option (default 6).

Note

For information about other implementations of this method, see documentation of the respective class.

See Also

aafList-class, aafPubMed-class, aafGO-class, aafGOItem-class, aafPathway-class, aafPathwayItem-class
Methods for function getTD

Description

Methods to get an HTML table cell representation of an object.

Methods

object = ANY  Returns <td> tag containing HTML representation of object. Sets class attribute to class(object).

Note

For information about other implementations of this method, see documentation of the respective class.

See Also

aafList-class, aafGO-class, aafPathway-class, aafIntensity-class

ggetText-methods  Methods for function getText

Description

Methods to get a textual representation of an object.

Methods

object = ANY  Returns a comma delimited list of the elements in list.

Note

For information about other implementations of this method, see documentation of the respective class.

See Also

aafList-class, aafCytoband-class, aafGO-class, aafGOItem-class, aafPathway-class, aafPathwayItem-class
getURL-methods Methods for function getURL

Description

Methods to get a URL link to a web resource for an object.

Methods

object = ANY Returns an empty character vector.

Note

For information about other implementations of this method, see documentation of the respective class.

See Also

aafList-class, aafGenBank-class, aafLocusLink-class, aafCytoband-class, aafUniGene-class, aafPubMed-class, aafGO-class, aafGOItem-class, aafPathwayItem-class

is.annpkg Determine if packages contain annotation

Description

Checks to see that the given packages contain all the necessary annotation environments to be usable by annaffy.

Usage

is.annpkg(packages, lib.loc = NULL)

Arguments

packages character vector containing package names to check
lib.loc a character vector with path names of R libraries, or NULL. The default value of NULL corresponds to all libraries currently known. If the default is used, the loaded packages are searched before the libraries.

Value

A logical vector indicating whether the packages contain annotation data.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>
selectorWidget

Description

Presents the user with a dialog box to select items from a list.

Usage

selectorWidget(options, selected = character(0), title = "Selector", ordersel = FALSE, ordernsel = FALSE, height = max(10, min(20, length(options))))

Arguments

options vector, options to be selected from
selected vector, subset of options selected by default
title character scalar, window title
ordersel boolean, keep the selected items in order?
ordernsel boolean, keep the not selected items in order?
height scalar, height of the two listboxes

Value

A character vector containing the selected items. If a vector of a different class was initially provided, it must be manually coerced back to the correct type.

Author(s)

Colin A. Smith, <annaffy@colinsmith.org>
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