BayesFactorNGS  The Binary Negative Gold Standard Developed via Bayes Factor

Description

This data consists of the 7739 binary interactions with computed Bayes factor of less than -3. This dataset was created 16 June 2009.

Usage

data(BayesFactorNGS)

Format

A data frame with observations on the following 5 variables.

- **Orf1** The ORF for gene 1
- **Orf2** The ORF for gene 2
- **Tested** The number of times the interaction was tested
- **Observed** The number of times the interaction was found
- **log_BF** The log of the resulting Bayes factor
Details

None.

Examples

data(BayesFactorPGS)

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BayesFactorPGS  The Binary Positive Gold Standard Developed via Bayes Factor

Description

This data consists of the 10200 binary interactions with computed Bayes factor of greater than 3. This dataset was created 16 June 2009.

Usage

data(BayesFactorPGS)

Format

A data frame with observations on the following 5 variables.

- **Orf1**  The ORF for gene 1
- **Orf2**  The ORF for gene 2
- **Tested**  The number of times the interaction was tested
- **Observed**  The number of times the interaction was found
- **log_BF**  The log of the resulting Bayes factor

Details

None.

Examples

data(BayesFactorPGS)
**BinaryGS**

*The Binary Gold Standard Data set Reported by Yu et al*

**Description**

This data consists of the 1318 binary interactions Yu et al reported as their binary gold standard data set.

**Usage**

```r
data(BinaryGS)
```

**Format**

A data frame with 1318 observations on the following 2 variables.

- **ORF1** The ORF for gene 1
- **ORF2** The ORF for gene 2

**Details**

None.

**Source**

The data were downloaded from [http://interactome.dfci.harvard.edu/S_cerevisiae](http://interactome.dfci.harvard.edu/S_cerevisiae) on Nov 21, 2008.

**References**


**Examples**

```r
data(BinaryGS)
```

---

**MIPSGS**

*MIPS Gold Standard Protein Interactions*

**Description**

The MIPS gold standard protein complex data set downloaded from the Gerstein Lab web site.

**Usage**

```r
data(MIPSGS)
```
Format

A data frame with 8617 observations on the following 5 variables.

- **ORF1** The ORF for one gene
- **ORF2** The ORF for the second gene
- **CID** The MIPS protein complex ID
- **NAME** The name of the complex.
- **NUMBER** The number of proteins in the complex.

Details

The data are essentially multiprotein complexes, curated from MIPS data, see also the data set in *Mpact*, which is related.

The data are all pairwise members of each complex.

Yu et al. state “To compile a reference data set with the lowest false-positive rate, we consider two proteins as interaction partners if and only if they are in the same complex of the highest level in the catalog.”

Source

[http://interolog.gersteinlab.org](http://interolog.gersteinlab.org)

References

Annotation Transfer Between Genomes: Protein-Protein Interologs and Protein-DNA Regulogs, H. Yu et al, Genome Research, 1107-1118, 2004.

Examples

data(MIPSGS)

data(Mpact)
**Format**

The data are stored as a matrix, with columns

- **ORF1** The ORF for gene 1
- **GENE1** The symbol for gene 1
- **ORF2** The ORF for gene 2
- **GENE2** The symbol for gene 2
- **DESCR** A description of one, or both genes
- **EVI** An evidence code.

**Details**

It is unlikely that the variables **GENE1** and **GENE2** can be relied on, as names change, so **ORF1** and **ORF2** should be preferred, and even these should be compared to current databases to see if they have been supplanted.

The **DESCR** field is incomplete, and seems to be inconsistent. It would probably better to rely on the the **ORFs** to obtain documentation on the **ORFs** from other sources.

The **EVI** variable, gives one, or more evidence codes, separate by commas ,. The evidence codes are further detailed in the **MpactEvidenceCodes** data object. Evidence codes can be helpful in filtering out interactions that might give rise to circularity in an analysis. By that we mean, that if you are analyzing data that comes from one of the experiments that was used to establish this gold standard data set, it might be best to filter those interactions out. You should be careful to only filter them, if their only evidence is from the experiment you are analyzing (if there is other evidence for the interaction it should be retained).

**Source**

The data were downloaded from [ftp://ftpmips.gsf.de/yeast/PPI/](ftp://ftpmips.gsf.de/yeast/PPI/).

**References**


PMID: 16381906

**See Also**

MpactEvidenceCodes

**Examples**

data(Mpact)

Mpact[1:3,]
**M|pactEvidenceCodes  MIPS Evidence Codes**

**Description**

The data in *M|pact* are interaction data from MIPS. Each interaction has one or more evidence code, that is intended to document the basis on which an interaction is presumed.

**Usage**

```r
data(MpactEvidenceCodes)
```

**Format**

A character vector of the descriptions, with names given by the evidence codes.

**Details**

There is a nesting in the evidence codes that is not directly reflected in this data. The first three names are 901, 901.01 and 901.01.01, so the first is a top level term, the second is nested under it, and the third under the second.

**Source**

The data were downloaded from `ftp://ftpmips.gsf.de/yeast/PPI/`.

**References**


**See Also**

*M|pact*

**Examples**

```r
data(MpactEvidenceCodes)
MpactEvidenceCodes[1:3]
```
NEGGS

Description
These data were supplied as supplementary material, for the paper below, as a data set for negative interactions.

Usage
data(NEGGS)

Format
A data frame with 2708746 observations on the following 4 variables.

    ORF1  The ORF of one interactor.
    ORF2  The ORF of the second interactor.
    LOC1  A description of where the first interactor is (typically) located in the cell.
    LOC2  A description of where the first interactor is (typically) located in the cell.

Details
The data are potentially problematic, since not being in the same cellular component does not mean that two proteins will not interact in some particular assay.

Only a very broad grouping of location is given, and one may want to refer to a more recent and potentially more authoritative source.

Source
http://interolog.gersteinlab.org

References
Annotation Transfer Between Genomes: Protein-Protein Interologs and Protein-DNA Regulogs, H. Yu et al, Genome Research, 1107-1118, 2004.

Examples
data(NEGGS)
table(NEGGS$LOC1)
table(NEGGS$LOC2)
Description

While Yu et al. call this a platinum standard data set, it is really a gold standard data set for binary physical interactions.

Usage

data(POSPS)

Format

A data frame with 1867 observations on the following 2 variables.

- ORF1 a character vector
- ORF2 a character vector

Details

These data, reported in the paper below, are intended to represent well established binary physical interactions between proteins. This contrasts with the gold standard MIPSGS which describes multi-protein complexes.

Ye et al. describe the construction as follows: “Briefly, the data set contains physical interactions from complex protein structures in the Protein Data Bank (Westbrook et al. 2003), verified interactions from small-scale experiments (Mewes et al. 2000; Xenarios et al. 2002; Bader et al. 2003), and protein pairs from small MIPS catalog complexes (4 or fewer subunits).”

References

Annotation Transfer Between Genomes: Protein-Protein Interologs and Protein-DNA Regulogs, H. Yu et al, Genome Research, 1107-1118, 2004.

Examples

data(POSPS)

Description

These data consist of the 188 binary interactions that Yu et al curated and referred to as the positive reference set.

Usage

data(PRS)
Format

A data frame with 188 observations on the following 2 variables.

- **ORF1** The ORF for gene 1.
- **ORF2** The ORF for gene 2.

Details

None.

Source

The data were downloaded from [http://interactome.dfci.harvard.edu/S_cerevisiae](http://interactome.dfci.harvard.edu/S_cerevisiae) on Nov 21, 2008.

References


Examples

data(PRS)

```r
## maybe str(PRS) ; plot(PRS) ...
```
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