

# Package ‘MAQCsubset’

October 16, 2021

**Title** Experimental Data Package: MAQCsubset  
**Version** 1.30.0  
**Author** VJ Carey  
**Description** Data Package automatically created on Sun Nov 19 15:59:29 2006.  
**Maintainer** VJ Carey <stvjc@channing.harvard.edu>  
**Depends** R (>= 2.10.0), affy (>= 1.23.4), Biobase (>= 2.5.5), lumi, methods  
**Suggests** genefilter, codelink  
**License** Artistic-2.0  
**biocViews** ExperimentData, MicroarrayData, GEO  
**LazyLoad** true  
**git\_url** <https://git.bioconductor.org/packages/MAQCsubset>  
**git\_branch** RELEASE\_3\_13  
**git\_last\_commit** e2a8f10  
**git\_last\_commit\_date** 2021-05-19  
**Date/Publication** 2021-10-16

## R topics documented:

gehMAQCsubDef . . . . .	2
gnfCerebHi . . . . .	2
MAQCsubset . . . . .	3
proboscis . . . . .	4
proboStruct-class . . . . .	5
<b>Index</b>	<b>6</b>

---

gehMAQCsubDef	<i>Excerpt from GE Codelink array contributions to MAQC</i>
---------------	---

---

### Description

Excerpt from GE Codelink contributions to MAQC

### Usage

```
data(gehSubRaw)
data(gehMAQCsubDef)
```

### Details

gehSubRaw is a `codeLink::CodeLink` instance based on reading the raw GEO files: "GSM123122\\_GEH\\_1\\_A1.TXT" "GSM123123\\_GEH\\_1\\_A2.TXT" "GSM123127\\_GEH\\_1\\_B1.TXT" "GSM123128\\_GEH\\_1\\_B2.TXT" "GSM123132\\_GEH\\_1\\_C1.TXT" "GSM123133\\_GEH\\_1\\_C2.TXT" "GSM123137\\_GEH\\_1\\_D1.TXT" "GSM123138\\_GEH\\_1\\_D2.TXT"

gehMAQCsubDef is an `ExpressionSet` instance based on default background correction and normalization of the `codeLink` package. The original feature names include duplicates; these were made unique by `make.names` with `unique=TRUE`.

### Author(s)

Vince Carey <stvjc@channing.harvard.edu>

### Examples

```
data(gehMAQCsubDef)
gehMAQCsubDef
```

---

gnfCerebHi	<i>Gene lists for hi or low abundance in cerebellum according to Novartis GNF symatlas</i>
------------	--

---

### Description

Data frames with gene lists for hi or low abundance in cerebellum according to Novartis GNF symatlas

### Usage

```
data(gnfCerebHi)
data(gnfCerebLow)
```

### Details

The `symatlas.gnf.org` database was searched using the `gcrma` version of human gene atlas for genes having expression in cerebellum at least 3 times (or at most 1/3 times) median expression over all organs surveyed. The resulting gene lists were intersected with genes present on GE codelink (version used in `MAQCsubset`) and `hgu95a`.

**Value**

data.frame instances with columns providing gene name, affy probe set identifier, codelink probe identifier, illuminaHumanv1 identifier.

**Author(s)**

Vince Carey <stvjc@channing.harvard.edu>

**Examples**

```
data(gnfCerebHi)
gnfCerebHi[1:3,]
```

---

MAQCsubset

*Experimental Data Package: MAQCsubset*

---

**Description**

selected data from the MAQC project (Nature Biotechnology, Sept. 2006)

**Usage**

```
data(afxsubRMAES)
data(afxsubRMA)
data(afxsub)
```

**Format**

The format is: An ExpressionSetObject with covariates:

- site: from cel
- samp: rna src/mixture code
- repl: replicate

**Note**

afxsubRMA is an exprSet (deprecated) and afxsub is an AffyBatch. afxsubRMAES is a proper ExpressionSet instance.

ilmMAQCsubR is the result of applying lumiR to the files in the vicinity of GEO GSM122901 with filename suffixes matching those of the sampleNames in the set.

**Examples**

```
data(afxsubRMAES)
```

---

proboscis	<i>Produce a plot similar to Figure 2 of the Shippy MAQC paper (PMID 16964226).</i>
-----------	---

---

### Description

Produce a plot similar to Figure 2 of the Shippy MAQC paper (PMID 16964226).

### Usage

```
proboscis(es, site=1, ABp=0.001, CDp=0.01, mmrad=100)
```

### Arguments

es	ExpressionSet instance with MAQC assay results
site	numeric code – site to be assessed
ABp	ABp – p-value threshold to declare concentration of gene in sample A to be different from the concentration in sample B
CDp	CDp – p-value threshold to declare concentration of gene in sample C to be different from the concentration in sample D
mmrad	numeric radius of the moving mean used to smooth the proportions differentially expressed

### Details

Figure 2 of the Shippy paper consists of a collection of plots of estimated probabilities of self-consistent monotone titration – briefly, samples are such that A has 100% USRNA, B has 100% Ambion brain, C has 75% USRNA+25% brain, D has 25% USRNA, 75% brain. Self-consistent monotone titration holds for gene *g* if microarray measures for that gene satisfy  $A > C > D > B$  or  $B > C > D > A$ . The estimated probability functions look like a creature sticking its nose over a wall, thus the name of this function.

### Value

an instance of `proboStruct`, for which a `plot` and `lines` method are available.

### Author(s)

Vince Carey <stvjc@channing.harvard.edu>

### References

PMID 16964226

### Examples

```
data(afxsubRMAES)
NN2 = proboscis(afxsubRMAES, site=2)
plot(NN2)
```

---

proboStruct-class      *Class "proboStruct"*

---

**Description**

structure for managing proboscis plot data

**Objects from the Class**

Objects can be created by calls of the form `new("proboStruct", ...)`.

**Slots**

.Data: Object of class "list" ~~

call: Object of class "call" ~~

**Extends**

Class "[list](#)", from data part. Class "[vector](#)", by class "list", distance 2. Class [AssayData-class](#), by class "list", distance 2.

**Methods**

plot

**Note**

The proboscis plot shows how the probability of self-consistent monotone titration (SCMT) varies with the spiked difference in concentrations of two mRNA preparations in an MAQC dataset.

**Author(s)**

V Carey <stvjc@channing.harvard.edu>

**References**

For Figure 2 of Shippy et al., Using RNA sample titrations... (Nat Biotech, 24(9):1123-1131, Sep 2006)

**Examples**

```
data(afxsubRMAES)
NN1 = proboscis(afxsubRMAES)
plot(NN1)
showClass("proboStruct")
```

# Index

- \* **classes**
  - proboStruct-class, 5
- \* **datasets**
  - MAQCsubset, 3
- \* **models**
  - gehMAQCsubDef, 2
  - gnfCerebHi, 2
  - proboscis, 4
  
- afxsub (MAQCsubset), 3
- afxsubRMA (MAQCsubset), 3
- afxsubRMAES (MAQCsubset), 3
  
- ExpressionSet, 4
  
- gehMAQCsubDef, 2
- gehSubRaw (gehMAQCsubDef), 2
- gnfCerebHi, 2
- gnfCerebLow (gnfCerebHi), 2
  
- ilmMAQCsubR (MAQCsubset), 3
  
- lines, proboStruct-method
  - (proboStruct-class), 5
- list, 5
  
- make.names, 2
- MAQCsubset, 3
  
- plot, proboStruct, ANY-method
  - (proboStruct-class), 5
- plot, proboStruct-method
  - (proboStruct-class), 5
- proboscis, 4
- proboStruct, 4
- proboStruct-class, 5
  
- show, proboStruct-method
  - (proboStruct-class), 5
  
- vector, 5