

# Package ‘MGFM’

April 14, 2017

**Type** Package

**Title** Marker Gene Finder in Microarray gene expression data

**Version** 1.8.0

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**Description** The package is designed to detect marker genes from  
Microarray gene expression data sets

**Depends** AnnotationDbi,annotate

**Suggests** hgu133a.db

**biocViews** Genetics, GeneExpression, Microarray

**License** GPL-3

**LazyData** yes

**NeedsCompilation** no

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## Description

The package is designed to detect marker genes from microarray gene expression data sets

**Details**

Package: MGFM  
Type: Package  
Version: 1.2.0  
Date: 2014-08-13  
License: GPL-3

**Author(s)**

Khadija El Amrani Maintainer: Khadija El Amrani <khadija.el-amrani@charite.de>

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ds2.mat

*Microarray gene expression data set*

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**Description**

microarray expression data set derived from 5 tissue types (lung, liver, heart, kidney, and brain) from two GEO Series GSE1133 and GSE2361. Each tissue type is represented by 3 replicates.

**Usage**

```
data(ds2.mat)
```

**Format**

A [matrix](#) with 22283 probe sets and 15 samples.

**Details**

The data consist of the following samples: GSM44702, GSM18953, GSM18954, GSM44704, GSM18949, GSM18950, GSM44690, GSM18921, GSM18922, GSM44675, GSM18955, GSM18956, GSM44671, GSM18951, GSM18952

**Value**

microarray data matrix

**Examples**

```
data(ds2.mat)
```

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`getHtmlpage`*Function to build HTML pages to show marker genes*

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**Description**

Function to build HTML pages to show marker genes

**Usage**

```
getHtmlpage(markers.list, chip, directory=getwd())
```

**Arguments**

`markers.list` List of marker genes, returned by the function [getMarkerGenes](#).  
`chip` Chip name.  
`directory` Path to the directory where to save the html pages.

**Details**

This function is based on the function [htmlpage](#) from the R-package 'annotate'.

**Value**

This function is used only for the side effect of creating HTML tables.

**Author(s)**

Khadija El Amrani <khadija.el-amrani@charite.de>

**Examples**

```
data("ds2.mat")
res.list <- getMarkerGenes(ds2.mat, samples2compare="all", annotate=TRUE, chip="hgu133a",
score.cutoff=1)
getHtmlpage(res.list, chip="hgu133a", directory=getwd())
```

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`getMarkerGenes`*Marker Gene Detection*

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**Description**

Function to detect marker genes using microarray gene expression data sets

**Usage**

```
getMarkerGenes(data.mat, samples2compare="all", annotate=TRUE, chip=NULL,
score.cutoff=1)
```

**Arguments**

data.mat	The microarray data matrix with probe sets corresponding to rows and samples corresponding to columns.
samples2compare	A character vector with the sample names to be compared (e.g. c("liver", "lung", "brain")). By default all samples are used.
annotate	A boolean value. If TRUE the gene symbol and the entrez gene id are shown.
chip	Chip name.
score.cutoff	A value in the interval [0,1] to filter the markers according to the specificity score. The default value is 1 (no filtering).

**Details**

For each marker in the output list, the probe set and the corresponding score are shown. If annotate is TRUE, the gene symbol and the entrez gene id are shown. The score is used to rank the markers according to their specificity. The score values range from 0 to 1. Values near 0 would indicate high specificity and large values closer to 1 would indicate low specificity.

**Value**

A list with marker genes associated with each sample type.

**Author(s)**

Khadija El Amrani <khadija.el-amrani@charite.de>

**Examples**

```
data("ds2.mat")
res.list <- getMarkerGenes(ds2.mat, samples2compare="all", annotate=TRUE,
chip="hgu133a", score.cutoff=1)
names(res.list)
## show the first 20 markers of liver
res.list[["liver_markers"]][1:20]
```

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