

# Package ‘Affyhgu133A2Expr’

October 4, 2014

**Type** Package

**Title** Affymetrix Human Genome U133A 2.0 Array (GPL571) Expression Data Package

**Version** 1.0.0

**Date** 2014-2-13

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**Description** Contains pre-built human (GPL571) databases of gene expression profiles. The gene expression data was downloaded from NCBI GEO and preprocessed and normalized consistently. The biological context of each sample was recorded and manually verified based on the sample description in GEO.

**License** GPL (>=2)

**Depends** R (>= 2.10)

**biocViews** AffymetrixChIP, Homo\_sapiens

## R topics documented:

Affyhgu133A2Expr-package . . . . .	2
Affyhgu133A2Expr . . . . .	3
Affyhgu133A2Exprtab . . . . .	4

<b>Index</b>	<b>5</b>
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Affyhgu133A2Expr-package

*Affymetrix Human Genome U133A 2.0 Array (GPL571) Expression  
Data Package*

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## Description

Contains gene expression profiles from Affymetrix Human Genome U133A 2.0 Array (GPL571). This package is primarily designed for GSCA (Gene Set Context Analysis). All gene expression data are downloaded from NCBI GEO. Gene expression data were preprocessed and normalized consistently using fRMA. Gene expression values are further standardized using gene expression barcode approach. The biological context of each sample was recorded and manually verified based on the sample description in GEO. Gene expression profiles are stored as vectors in separate .rda files (with xz compression).

## Details

Package: Affyhgu133A2Expr  
Type: Package  
Version: 0.99.0  
Date: 2014-2-6  
License: GPL 2.0

## Author(s)

Author: Zhicheng Ji, Hongkai Ji Maintainer: Zhicheng Ji <zji4@jhu.edu>

## References

- McCall M.N., Bolstad B.M., and Irizarry R.A. (2010) Frozen robust multiarray analysis (fRMA). *Biostatistics* 11, 242-253.
- McCall, M. N., Uppal, K., Jaffee, H. A., Zilliox, M. J., & Irizarry, R. A. (2011). The Gene Expression Barcode: leveraging public data repositories to begin cataloging the human and murine transcriptomes. *Nucleic acids research*, 39(suppl 1), D1011-D1015.
- Barrett T., et al. (2007) NCBI GEO: mining tens of millions of expression profiles - database and tools update. *Nucl. Acids Res.* 35, D760-D765.

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Affyhg133A2Expr	<i>Data of human gene expression profiles from the Affymetrix Human Genome U133A 2.0 Array (GPL571).</i>
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## Description

The data set contains 313 human profiles on 12494 genes downloaded from NCBI GEO. Gene expression data were preprocessed and normalized consistently using fRMA. Gene expression values are further standardized using gene expression barcode approach. The biological context of each sample was recorded and manually verified based on the sample description in GEO. Expression profiles are stored in separate .rda files (with xz compression).

## Details

This data package contains 12494 .rda files with xz compression. Each .rda file contains the gene expression vector of length 313 for the gene ID represented by its file name, and the vector consists of 313 samples measurements from NCBI GEO obtained using the GPL571 platform. Gene expression data were preprocessed and normalized consistently using fRMA. Gene expression values were further standardized using gene expression barcode approach. Probeset with the largest coefficient of variation from all probesets that corresponds to the same gene is retained, so that each gene uniquely matches to one row in the database. The biological context of each sample was also recorded and manually verified based on the sample description in GEO. The sample id, sample type, and experiment id for each sample in the gene expression compendium are also included in this data package.

## Source

[www.ncbi.nlm.nih.gov/geo/](http://www.ncbi.nlm.nih.gov/geo/)

## References

- McCall M.N., Bolstad B.M., and Irizarry R.A. (2010) Frozen robust multiarray analysis (fRMA). *Biostatistics* 11, 242-253.
- McCall, M. N., Uppal, K., Jaffee, H. A., Zilliox, M. J., & Irizarry, R. A. (2011). The Gene Expression Barcode: leveraging public data repositories to begin cataloging the human and murine transcriptomes. *Nucleic acids research*, 39(suppl 1), D1011-D1015.
- Barrett T., et al. (2007) NCBI GEO: mining tens of millions of expression profiles - database and tools update. *Nucl. Acids Res.* 35, D760-D765.

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Affyhg133A2Exprtab     *Reference table for Affyhg133A2Expr gene expression compendium*

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**Description**

Contains the sample id, sample type, and experiment id for each sample in the Affymetrix Human Genome U133A 2.0 Array (GPL571) gene expression compendium.

**Usage**

```
data(Affyhg133A2Exprtab)
```

**Format**

A data frame with 313 observations on the following 3 variables.

SampleID a character vector

ExperimentID a character vector

SampleType a character vector

**Details**

SampleID is a GSM ID that NCBI GEO uses to as a sample identifier. ExperimentID is a GEO ID that NCBI GEO uses to identify an experiment. SampleType denotes the cell type or tissue and whether the sample is given a specific treatment or in a specific condition.

**Source**

[www.ncbi.nlm.nih.gov/geo/](http://www.ncbi.nlm.nih.gov/geo/)

**References**

McCall M.N., Bolstad B.M., and Irizarry R.A. (2010) Frozen robust multiarray analysis (fRMA). *Biostatistics* 11, 242-253.

McCall, M. N., Uppal, K., Jaffee, H. A., Zilliox, M. J., & Irizarry, R. A. (2011). The Gene Expression Barcode: leveraging public data repositories to begin cataloging the human and murine transcriptomes. *Nucleic acids research*, 39(suppl 1), D1011-D1015.

Barrett T., et al. (2007) NCBI GEO: mining tens of millions of expression profiles - database and tools update. *Nucl. Acids Res.* 35, D760-D765.

**Examples**

```
## Load the reference table
data(Affyhg133A2Exprtab)
str(Affyhg133A2Exprtab)
```

# Index

- \*Topic **datasets,**  
    **Affyhu133A2Exprtab**  
    Affyhu133A2Exprtab, [4](#)
- \*Topic  
    **datasets,GPL571,database,Affyhu133A2Expr**  
    Affyhu133A2Expr, [3](#)
- \*Topic **package, database,**  
    **Affyhu133A2Expr**  
    Affyhu133A2Expr-package, [2](#)
  
- Affyhu133A2Expr, [3](#)
- Affyhu133A2Expr-package, [2](#)
- Affyhu133A2Exprtab, [4](#)