Package 'ChimpHumanBrainData'

July 24, 2025

Type Package

Title Chimp and human brain data package

Version 1.46.0

Date 2013-11-04

Author Roman Jaksik, Naomi Altman, and Sean Davis

Maintainer Sean Davis <seandavi@gmail.com>

Description This data package contains chimp and human brain data extracted from the ArrayExpress accession E-AFMX-
2. Both human and chimp RNAs were run on human hgu95av2 Affymetrix arrays. It is a useful dataset for tutorials.

Depends affy,qvalue,limma,hexbin,statmod

Suggests hgu95av2cdf

License MIT

biocViews Tissue, Homo_sapiens_Data, Pan_troglodytes_Data, MicroarrayData, TissueMicroarrayData, GEO

git_url https://git.bioconductor.org/packages/ChimpHumanBrainData

git_branch RELEASE_3_21

git_last_commit a949566

git_last_commit_date 2025-04-15

Repository Bioconductor 3.21

Date/Publication 2025-07-24

Contents

ChimpHumanBrainData-package

Container for Chimp and Human Brain Data

Description

The origin of humans was accompanied by the emergence of new behavioral and cognitive functions, including language and specialized forms of abstract representation. However, the molecular foundations of these human capabilities are poorly understood. Because of the extensive similarity between human and chimpanzee DNA sequences, it has been suggested that many of the key phenotypic differences between species result primarily from alterations in the regulation of genes rather than in their sequences.

To characterize gene expression patterns accross the brain and investigate the genetic basis of human specializations in brain organization and cognition, we used microarrays to quantify the transcript levels of thousands of genes in tissue samples from different brain regions of several human and chimpanzee individuals. Our results indicated that the human brain displays a distinctive pattern of gene expression relative to non-human primates, with higher expression levels for many genes belonging to a wide variety of functional classes. The increased expression of these genes could provide the basis for extensive modifications of cerebral physiology and function in humans, and suggests that the human brain is characterized by elevated levels of neuronal activity.

This package contains a collection of .CEL files meant to be used for training purposes.

Details

Package:	ChimpHumanBrainData
Type:	Package
Version:	1.0
Date:	2013-10-29
License:	MIT

Author(s)

Roman Jaksik

Maintainer: Sean Davis <sdavis2@mail.nih.gov>

References

Caceres M, Lachuer J, Zapala MA, Redmond JC et al. Elevated gene expression levels distinguish human from non-human primate brains. Proc Natl Acad Sci U S A 2003 Oct 28;100(22):13030-5. PMID: 14557539

http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE7540

Examples

```
library(affy)
celfileDir = system.file('extdata',package='ChimpHumanBrainData')
celfileNames = list.celfiles(celfileDir)
abatch = ReadAffy(filenames=celfileNames,celfile.path=celfileDir,compress=TRUE)
```

Index