

Package 'PWMErich.Mmusculus.background'

October 18, 2022

Maintainer Diego Diez <diego10ruiz@gmail.com>

License GPL-3

Title M. musculus background for PWMErich

Type Package

LazyLoad yes

Author Robert Stojnic

Description PWMErich pre-compiled background objects for M.musculus (mouse) and MotifDb M. musculus motifs.

Version 4.30.0

biocViews Mus_musculus_Data

Date 2015-09-30

Depends R (>= 2.10), methods, PWMErich

git_url <https://git.bioconductor.org/packages/PWMErich.Mmusculus.background>

git_branch RELEASE_3_15

git_last_commit ded1d64

git_last_commit_date 2022-04-26

Date/Publication 2022-10-18

R topics documented:

PWMErich.Mmusculus.background-package	2
Index	4

PWMErich.Mmusculus.background-package

PWMErich.Mmusculus.background package overview

Description

This package provides a set of pre-compiled genomic background files for the PWMErich package and *M. musculus* (mouse). The backgrounds were pre-compiled using unique 2kb promoters in mouse.

- `MotifDb.Mmus.PFM` - a list of position frequency matrices (PFMs) from `MotifDb`
- `MotifDb.Mmus` - the corresponding PWMs generated by using the background frequencies of A,C,G,T in a set of 2kb mouse (mm9) promoters.
- `PWMLogn.mm9.MotifDb.Mmus` - pre-compiled threshold-free lognormal background for `MotifDb` mouse PWMs. The lognormal distribution is fitted to 500bp chunks of 2kb mouse (mm9) promoters.
- `PWMCutoff4.mm9.MotifDb.Mmus`, `PWMCutoff5.mm9.MotifDb.Mmus` - pre-compiled Z-score background with cutoff of 4 and 5 (base e) for `MotifDb` mouse PWMs. The number of hits is counted in 2kb mouse (mm9) promoters.
- `PWMPvalueCutoff1e2.mm9.MotifDb.Mmus`, `PPWMPvalueCutoff1e3.mm9.MotifDb.Mmus`, `PPWMPvalueCutoff1e4.mm9.MotifDb.Mmus` - pre-compiled Z-score background with P-value cutoff of 0.01, 0.001, and 0.0001 for `MotifDb` mouse PWMs. The number of hits with smaller P-value than cutoff is counted in 2kb mouse (mm9) promoters.

Usage

```
data(MotifDb.Mmus.PFM)
data(MotifDb.Mmus)
data(PWMLogn.mm9.MotifDb.Mmus)
data(PWMCutoff4.mm9.MotifDb.Mmus)
data(PWMCutoff5.mm9.MotifDb.Mmus)
data(PWMPvalueCutoff1e2.mm9.MotifDb.Mmus)
data(PWMPvalueCutoff1e3.mm9.MotifDb.Mmus)
data(PWMPvalueCutoff1e4.mm9.MotifDb.Mmus)
```

Details

All of these objects were created with the appropriate functions available in the PWMErich package (see Section 'See also'). We recommend using these functions to generate backgrounds for a custom set of background sequences and/or DNA motifs.

This package also contains the 2kb upstream sequences for mouse genes (`mm9.upstream2000`) which were removed from the `BSgenome.Mmusculus.UCSC.mm9` package starting from Bioconductor version 3.0.

Author(s)

Robert Stojnic
Cambridge Systems Biology Centre
University of Cambridge, UK
Maintainer: Robert Stojnic <robert.stojnic@gmail.com>

See Also

[makeBackground](#), [makePWMLognBackground](#), [makePWMCutoffBackground](#), [makePWMEmpiricalBackground](#).

Examples

```
data(PWMLogn.mm9.MotifDb.Mmus)

res = motifEnrichment(DNAString("TGCATCAAGTGTGTAGTGCAAGTGAGTGATGAATGC"),
  PWMLogn.mm9.MotifDb.Mmus)

groupReport(res)[1:10]
```

Index

* **package** 2
 PWMErich.Mmusculus.background-package,
 2

makeBackground, 3
makePWMCutoffBackground, 3
makePWMEmpiricalBackground, 3
makePWMLognBackground, 3
mm9.upstream2000
 (PWMErich.Mmusculus.background-package),
 2

MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),
 2

PWMCutoff4.mm9.MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),
 2

PWMCutoff5.mm9.MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),
 2

PWMErich.Mmusculus.background
 (PWMErich.Mmusculus.background-package),
 2

PWMErich.Mmusculus.background-package,
 2

PWMGEV.mm9.MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),
 2

PWMLogn.mm9.MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),
 2

PWMPvalueCutoff1e2.mm9.MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),
 2

PWMPvalueCutoff1e3.mm9.MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),
 2

PWMPvalueCutoff1e4.mm9.MotifDb.Mmus
 (PWMErich.Mmusculus.background-package),