

Package 'PWMEnrich.Dmelanogaster.background'

December 18, 2025

Maintainer Diego Diez <diego10ruiz@gmail.com>

License GPL-3

Title D. melanogaster background for PWMEnrich

Type Package

LazyLoad yes

Author Robert Stojnic

Description PWMEnrich pre-compiled background objects for Drosophila melanogaster and MotifDb D. melanogaster motifs.

Version 4.45.0

biocViews Drosophila_melanogaster_Data

Date 2015-09-30

Depends R (>= 2.10), methods, PWMEnrich

git_url <https://git.bioconductor.org/packages/PWMEnrich.Dmelanogaster.background>

git_branch devel

git_last_commit 13405a2

git_last_commit_date 2025-10-29

Repository Bioconductor 3.23

Date/Publication 2025-12-18

Contents

PWMEnrich.Dmelanogaster.background-package	2
Index	4

PWMErich.Dmelanogaster.background-package

PWMErich.Dmelanogaster.background package overview

Description

This package provides a set of pre-compiled genomic background files for the PWMErich package and *D. melanogaster*. The backgrounds were pre-compiled using unique promoters of *Drosophila melanogaster*.

- `MotifDb.Dmel.PFM` - a list of 740 position frequency matrices (PFMs) from `MotifDb`
- `MotifDb.Dmel` - the corresponding PWMs generated by using the background frequencies of A,C,G,T in a set of 10031 2kb promoters in *D. Melanogaster*.
- `PWMLogn.dm3.MotifDb.Dmel` - pre-compiled threshold-free lognormal background for JASPAR insects PWMs. The lognormal distribution is fitted to 1kb fragments of 10031 2kb *Drosophila Melanogaster* (dm3) promoters. For each gene one promoter is taken (from the first transcript).
- `PWMCutoff4.dm3.MotifDb.Dmel`, `PWMCutoff5.dm3.MotifDb.Dmel` - pre-compiled Z-score background with cutoff of 4 and 5 (base e) for JASPAR insects PWMs. The number of hits above the score cutoff is counted in 10031 2kb *Drosophila Melanogaster* (dm3) promoters. For each gene one promoter is taken (from the first transcript).
- `PWMPvalueCutoff1e2.dm3.MotifDb.Dmel`, `PPWMPvalueCutoff1e3.dm3.MotifDb.Dmel`, `PPWMPvalueCutoff1e4.dm3.MotifDb.Dmel` - pre-compiled Z-score background with P-value cutoff of 0.01, 0.001, and 0.0001 for JASPAR insects PWMs. The number of hits with smaller P-value than cutoff is counted in 10031 2kb *Drosophila Melanogaster* (dm3) promoters. For each gene one promoter is taken (from the first transcript).

Usage

```
data(MotifDb.Dmel.PFM)
data(MotifDb.Dmel)
data(PWMLogn.dm3.MotifDb.Dmel)
data(PWMCutoff4.dm3.MotifDb.Dmel)
data(PWMCutoff5.dm3.MotifDb.Dmel)
data(PWMPvalueCutoff1e2.dm3.MotifDb.Dmel)
data(PWMPvalueCutoff1e3.dm3.MotifDb.Dmel)
data(PWMPvalueCutoff1e4.dm3.MotifDb.Dmel)
```

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 *Drosophila* genes (`dm3.upstream2000`) which were removed from the `BSgenome.Dmelanogaster.UCSC.dm3` 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.dm3.MotifDb.Dmel)

res = motifEnrichment(DNAString("TGCATCAAGTGTGTAGTGCATGAATGC"), PWMLogn.dm3.MotifDb.Dmel)

head(motifRankingForGroup(res))
```

Index

* package

PWMErich.Dmelanogaster.background-package,
2

dm3.upstream2000
(PWMErich.Dmelanogaster.background-package),
2

makeBackground, 3
makePWMCutoffBackground, 3
makePWMEmpiricalBackground, 3
makePWMLognBackground, 3
MotifDb.Dmel
(PWMErich.Dmelanogaster.background-package),
2

PWMCutoff4.dm3.MotifDb.Dmel
(PWMErich.Dmelanogaster.background-package),
2

PWMCutoff5.dm3.MotifDb.Dmel
(PWMErich.Dmelanogaster.background-package),
2

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

PWMErich.Dmelanogaster.background-package,
2

PWMLogn.dm3.MotifDb.Dmel
(PWMErich.Dmelanogaster.background-package),
2

PWMPvalueCutoff1e2.dm3.MotifDb.Dmel
(PWMErich.Dmelanogaster.background-package),
2

PWMPvalueCutoff1e3.dm3.MotifDb.Dmel
(PWMErich.Dmelanogaster.background-package),
2

PWMPvalueCutoff1e4.dm3.MotifDb.Dmel
(PWMErich.Dmelanogaster.background-package),
2