

# Package 'PWMErich.Mmusculus.background'

April 8, 2015

**Maintainer** Robert Stojnic <robert.stojnic@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** 4.0.1

**biocViews** AnnotationData, Organism, Mus\_musculus

**Date** 2014-08-23

**Depends** R (>= 2.10), methods, PWMErich

## R topics documented:

PWMErich.Mmusculus.background-package . . . . . 1

**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 `BSSgenome.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](mailto: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

\*Topic **package** 1  
    PWMErich.Mmusculus.background-package,  
        1

makeBackground, 2  
makePWMCutoffBackground, 2  
makePWMEmpiricalBackground, 2  
makePWMLognBackground, 2  
mm9.upstream2000  
    (PWMErich.Mmusculus.background-package),  
        1

MotifDb.Mmus  
    (PWMErich.Mmusculus.background-package),  
        1

PWMCutoff4.mm9.MotifDb.Mmus  
    (PWMErich.Mmusculus.background-package),  
        1

PWMCutoff5.mm9.MotifDb.Mmus  
    (PWMErich.Mmusculus.background-package),  
        1

PWMErich.Mmusculus.background  
    (PWMErich.Mmusculus.background-package),  
        1

PWMErich.Mmusculus.background-package,  
    1

PWMGEV.mm9.MotifDb.Mmus  
    (PWMErich.Mmusculus.background-package),  
        1

PWMLogn.mm9.MotifDb.Mmus  
    (PWMErich.Mmusculus.background-package),  
        1

PWMPvalueCutoff1e2.mm9.MotifDb.Mmus  
    (PWMErich.Mmusculus.background-package),  
        1

PWMPvalueCutoff1e3.mm9.MotifDb.Mmus  
    (PWMErich.Mmusculus.background-package),  
        1

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