

# Package ‘PWMErich.Hsapiens.background’

November 26, 2024

**Maintainer** Diego Diez <diego10ruiz@gmail.com>

**License** GPL-3

**Title** H. sapiens background for PWMErich

**Type** Package

**LazyLoad** yes

**Author** Robert Stojnic

**Description** PWMErich pre-compiled background objects for H. sapiens (human) and MotifDb H. sapiens motifs.

**Version** 4.40.0

**biocViews** Homo\_sapiens\_Data, CGHData

**Date** 2015-09-30

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

**git\_url** <https://git.bioconductor.org/packages/PWMErich.Hsapiens.background>

**git\_branch** RELEASE\_3\_20

**git\_last\_commit** a72eda4

**git\_last\_commit\_date** 2024-10-29

**Repository** Bioconductor 3.20

**Date/Publication** 2024-11-26

## Contents

PWMErich.Hsapiens.background-package . . . . .	1
<b>Index</b>	<b>4</b>

---

PWMErich.Hsapiens.background-package  
*PWMErich.Hsapiens.background package overview*

---

## Description

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

- MotifDb.Hsap.PFM - a list of position frequency matrices (PFMs) from MotifDb
- MotifDb.Hsap - the corresponding PWMs generated by using the background frequencies of A,C,G,T in a set of 2kb human (hg19) promoters.
- PWMLogn.hg19.MotifDb.Hsap - pre-compiled threshold-free lognormal background for MotifDb human PWMs. The lognormal distribution is fitted to 500bp chunks of 2kb human (hg19) promoters.
- PWMCutoff4.hg19.MotifDb.Hsap, PWMCutoff5.hg19.MotifDb.Hsap - pre-compiled Z-score background with cutoff of 4 and 5 (base e) for MotifDb human PWMs. The number of hits is counted in 2kb human (hg19) promoters.
- PWPvalueCutoff1e2.hg19.MotifDb.Hsap, PPWPvalueCutoff1e3.hg19.MotifDb.Hsap, PPWPvalueCutoff1e4.hg19.MotifDb.Hsap - pre-compiled Z-score background with P-value cutoff of 0.01, 0.001, and 0.0001 for MotifDb human PWMs. The number of hits with smaller P-value than cutoff is counted in 2kb human (hg19) promoters.

## Usage

```
data(MotifDb.Hsap.PFM)
data(MotifDb.Hsap)
data(PWMLogn.hg19.MotifDb.Hsap)
data(PWMCutoff4.hg19.MotifDb.Hsap)
data(PWMCutoff5.hg19.MotifDb.Hsap)
data(PWPvalueCutoff1e2.hg19.MotifDb.Hsap)
data(PWPvalueCutoff1e3.hg19.MotifDb.Hsap)
data(PWPvalueCutoff1e4.hg19.MotifDb.Hsap)
```

## 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 human genes (hg19.upstream2000) which were removed from the BSgenome.Hsapiens.UCSC.hg19 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.hg19.MotifDb.Hsap)
```

```
res = motifEnrichment(DNAString("TGCATCAAGTGTGTAGTGCAAGTGAGTGATGAGTAGAAGTTGAGTGAGGTAGATGC"),  
  PWMLogn.hg19.MotifDb.Hsap)
```

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

# Index

## \* package

PWMEnrich.Hsapiens.background-package,  
[1](#)

hg19.upstream2000  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

makeBackground, [2](#)  
makePWMCutoffBackground, [2](#)  
makePWMEmpiricalBackground, [2](#)  
makePWMLognBackground, [2](#)

MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMCutoff4.hg19.MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMCutoff5.hg19.MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMEnrich.Hsapiens.background  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMEnrich.Hsapiens.background-package,  
[1](#)

PWMGEV.hg19.MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMLogn.hg19.MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMPvalueCutoff1e2.hg19.MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMPvalueCutoff1e3.hg19.MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)

PWMPvalueCutoff1e4.hg19.MotifDb.Hsap  
(PWMEnrich.Hsapiens.background-package),  
[1](#)