

Package ‘PWMErich.Hsapiens.background’

December 26, 2024

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Title H. sapiens background for PWMErich

Type Package

LazyLoad yes

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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 2024-12-26

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PWMErich.Hsapiens.background package overview

Description

This package provides a set of pre-compiled genomic background files for the PWME`nrich` 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.
- `PWMPvalueCutoff1e2.hg19.MotifDb.Hsap`, `PPWMPvalueCutoff1e3.hg19.MotifDb.Hsap`, `PPWMPvalueCutoff1e4.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(PWMPvalueCutoff1e2.hg19.MotifDb.Hsap)
data(PWMPvalueCutoff1e3.hg19.MotifDb.Hsap)
data(PWMPvalueCutoff1e4.hg19.MotifDb.Hsap)
```

Details

All of these objects were created with the appropriate functions available in the PWME`nrich` 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.

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See Also

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

Examples

```
data(PWMLogn.hg19.MotifDb.Hsap)

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

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

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