BSgenome.Hsapiens.UCSC.hg38
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Full genome sequences for Homo sapiens (UCSC version hg38)

Description
Full genome sequences for Homo sapiens (Human) as provided by UCSC (hg38, Dec. 2013) and stored in Biostrings objects.

Note
This BSgenome data package was made from the following source data files:

hg38.2bit from http://hgdownload.cse.ucsc.edu/goldenPath/hg38/bigZips/

See ?BSgenomeForge and the BSgenomeForge vignette (vignette("BSgenomeForge")) in the BSgenome software package for how to make a BSgenome data package.

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See Also
- BSgenome objects and the available.genomes function in the BSgenome software package.
- DNAString objects in the Biostrings package.
- The BSgenomeForge vignette (vignette("BSgenomeForge")) in the BSgenome software package for how to make a BSgenome data package.

Examples

BSgenome.Hsapiens.UCSC.hg38
genome <- BSgenome.Hsapiens.UCSC.hg38
seqlengths(genome)
genome$chr1 # same as genome[["chr1"]]

## -----------------------------------------------
## Extract the upstream sequences
## The upstream sequences located in
## http://hgdownload.cse.ucsc.edu/goldenPath/hg38/bigZips/
## are based on RefSeq genes (RefSeq Genes track in the Genome Browser).
## Upstream sequences based on UCSC genes (UCSC Genes track in the
## Genome Browser) can easily be extracted from the full genome
## sequences with:

library(TxDb.Hsapiens.UCSC.hg38.knownGene)
knownGene_txdb <- TxDb.Hsapiens.UCSC.hg38.knownGene
knownGene_up1000seqs <- extractUpstreamSeqs(genome, knownGene_txdb)

## Or, to get upstream sequences based on RefSeq genes:

refGene_txdb <- makeTxDbFromUCSC("hg38", "refGene")
refGene_up1000seqs <- extractUpstreamSeqs(genome, refGene_txdb)

## Note that you can make a TxDb object from various annotation
## resources. See the makeTxDbFromUCSC(), makeTxDbFromBiomart(), and
## makeTxDbFromGFF() functions in the GenomicFeatures package for more
## information.
## IMPORTANT: Make sure you use a TxDb package (or TxDb object) that
## contains a gene model based on hg38 or on a compatible genome (i.e.
## a genome with sequences identical to the sequences in hg38). See
## ?extractUpstreamSeqs in the GenomicFeatures package for more
## information.

## Genome-wide motif searching
## See the GenomeSearching vignette in the BSgenome software
## package for some examples of genome-wide motif searching using
## Biostrings and the BSgenome data packages:
if (interactive())
  vignette("GenomeSearching", package="BSgenome")
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