

# BSgenome.Rnorvegicus.UCSC.rn4

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*Full genome sequences for Rattus norvegicus (UCSC version rn4)*

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## Description

Full genome sequences for Rattus norvegicus (Rat) as provided by UCSC (rn4, Nov. 2004) and stored in Biostrings objects.

## Note

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

chromFa.tar.gz from <http://hgdownload.cse.ucsc.edu/goldenPath/rn4/bigZips/>

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

## Author(s)

The Bioconductor Dev Team

## 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.Rnorvegicus.UCSC.rn4
genome <- BSgenome.Rnorvegicus.UCSC.rn4
seqlengths(genome)
genome$chr1 # same as genome[["chr1"]]
```

```
## -----
## Upstream sequences
```

```
## -----
## Starting with BioC 3.0, the upstream1000, upstream2000, and
## upstream5000 sequences for rn4 are not included in the BSgenome data
## package anymore. However they can easily be extracted from the full
## genome sequences with something like:

library(TxDb.Rnorvegicus.UCSC.rn4.ensGene)
txdb <- TxDb.Rnorvegicus.UCSC.rn4.ensGene
gn <- sort(genes(txdb))
up1000 <- flank(gn, width=1000)
up1000seqs <- getSeq(genome, up1000)

## IMPORTANT: Make sure you use a TxDb package (or TranscriptDb object),
## that contains a gene model based on the exact same reference genome
## as the BSgenome object you pass to getSeq(). Note that you can make
## your own custom TranscriptDb object from various annotation resources.
## See the makeTranscriptDbFromUCSC(), makeTranscriptDbFromBiomart(),
## and makeTranscriptDbFromGFF() functions in the GenomicFeatures
## package.

## -----
## 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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