

# BSgenome.Rnorvegicus.UCSC.rn4

September 24, 2013

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Rnorvegicus

*Rattus norvegicus (Rat) full genome (UCSC version rn4)*

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## Description

*Rattus norvegicus* (Rat) full genome 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:

sequences: chromFa.tar.gz, upstream1000.fa.gz, upstream2000.fa.gz, upstream5000.fa.gz  
from <http://hgdownload.cse.ucsc.edu/goldenPath/rn4/bigZips/>

AGAPS masks: all the chr\*\_gap.txt.gz files from <ftp://hgdownload.cse.ucsc.edu/goldenPath/rn4/database>

RM masks: <http://hgdownload.cse.ucsc.edu/goldenPath/rn4/bigZips/chromOut.tar.gz>

TRF masks: <http://hgdownload.cse.ucsc.edu/goldenPath/rn4/bigZips/chromTrf.tar.gz>

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

## Author(s)

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## See Also

[BSgenome-class](#), [DNAString-class](#), [available.genomes](#), [BSgenomeForge](#)

**Examples**

```
Rnorvegicus
seqlengths(Rnorvegicus)
Rnorvegicus$chr1 # same as Rnorvegicus[["chr1"]]

if ("AGAPS" %in% masknames(Rnorvegicus)) {

  ## Check that the assembly gaps contain only Ns:
  checkOnlyNsInGaps <- function(seq)
  {
    ## Replace all masks by the inverted AGAPS mask
    masks(seq) <- gaps(masks(seq)["AGAPS"])
    unique_letters <- uniqueLetters(seq)
    if (any(unique_letters != "N"))
      stop("assembly gaps contain more than just Ns")
  }

  ## A message will be printed each time a sequence is removed
  ## from the cache:
  options(verbose=TRUE)

  for (seqname in seqnames(Rnorvegicus)) {
    cat("Checking sequence", seqname, "... ")
    seq <- Rnorvegicus[[seqname]]
    checkOnlyNsInGaps(seq)
    cat("OK\n")
  }
}

## 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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