

# Package ‘pepDat’

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**Type** Package

**Title** Peptide microarray data package

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**Description** Provides sample files and data for the vignettes of pepStat and Pviz as well as peptide collections for HIV and SIV.

**License** Artistic-2.0

**Depends** R(>= 3.0.0)

**Imports** GenomicRanges

**Suggests** knitr

**biocViews** MicroarrayData

**VignetteBuilder** knitr

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pep\_hxb2

*Reference peptide dataset for HIV envelope*

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### Description

A peptide dataset created from the multiple alignment of the reference sequence hxb2 and the seven subtypes A, B, C, D, M, CRF01, CRF02

### Usage

```
data(pep_hxb2)
```

### Format

A GRanges object. One row per peptide.

### Details

- peptides: The rownames are 15mers from the envelope of 7 subtypes of HIV-1.
- seqnames: An information regarding the genomic location of the peptide.
- ranges: The start and end coordinate of the peptide based on the coordinates of the reference hxb2.
- aligned: The aligned column represents the peptide as it is aligned in the multiple alignment.
- trimmed: The trimmed column represents the part of hxb2's sequence aligned with the peptide.
- zSums: The sum of the zScale of each amino-acid of the 15mer.
- clade: A list of the subtypes which contain this peptide.

### Note

The alignments used to create this collections are available in the extdata/alignments folder, as well as the raw sequences on fasta format.

### References

<http://www.hiv.lanl.gov/content/sequence/HIV/REVIEWS/HXB2.html>

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pep\_hxb2JPT

*Peptide collection for HXB2 and JPT clades*

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### Description

Peptide collection for HXB2 and JPT clades

### Usage

```
data(pep_hxb2JPT)
```

### Format

A GRanges object. One row per peptide.

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pep\_m239smE543

*Peptide collection for SIV envelope*

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**Description**

Peptide collection for SIV envelope

**Usage**

```
data(pep_m239smE543)
```

**Format**

A GRanges object. One row per peptide.

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pep\_mac239

*Reference peptide dataset for SIV envelope*

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**Description**

A peptide dataset created from the multiple alignment of the reference sequence mac239 from LANL database, our mac239 and E660 subtypes.

**Usage**

```
data(pep_mac239)
```

**Format**

A GRanges object. One row per peptide.

**Details**

- peptides: The rownames are 15mers from the envelope of mac239 and E660.
- seqnames: An information regarding the genomic location of the peptide.
- ranges: The start and end coordinate of the peptide based on the coordinates of the reference mac239.
- aligned: The aligned column represents the peptide as it is aligned in the multiple alignment.
- peptideNb: Number of the corresponding mac239 peptide.
- zSums: The sum of the zScale of each amino-acid of the 15mer.
- clade: A list of the subtypes which contain this peptide.

**Note**

The alignments used to create this collections are available in the extdata/alignments folder, as well as the raw sequences on fasta format.

**References**

[http://www.hiv.lanl.gov/content/sequence/HIV/REVIEWS/SIV\\_NUMBERING2001/SivNumbering.html](http://www.hiv.lanl.gov/content/sequence/HIV/REVIEWS/SIV_NUMBERING2001/SivNumbering.html)

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restab

*Summary tables from pepStat*

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### **Description**

This is the result tables of a peptide microarray analysis using pepStat. It summarizes the antibody binding prediction for each peptide, depending on the group. restab\_aggregate has one row per peptide. Peptides that belong to more than one clade have a single entry. restab has one row per peptide per clade. Each clade has been normalized separately.

### **Format**

A data.frame containing 1964 rows and 9 variables for restab. 1423 rows and 9 variables for restab\_aggregate.

- peptide: Peptide sequences
- position: The position of peptides on the reference sequence HXB2.
- space: The location of the peptide. Here, gp160, the envelope of HIV.
- start: The start coordinate of the peptide on the reference sequence.
- end: The end coordinate of the peptide on the reference sequence.
- width: The length of the peptides.
- clade: The virus subtypes that the peptide belongs to.
- group1: Frequency of antibody binding events in the subjects of group1 for that peptide.
- group2: Frequency of antibody binding events in the subjects of group2 for that peptide.

### **Note**

For more information, see `?pepStat::restab`.

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