

# The `DMRcatedata` package user's guide

Peters TJ, Buckley MJ, Pidsley R, Clark SJ, Molloy PL

April 18, 2015

## Package Contents

`DMRcatedata` accompanies the `DMRcate` package, providing data for examples and probe filtering.

```
library(DMRcatedata)
data(dmrcatedata)
```

Three objects are contained in `DMRcatedata`. `crosshyb` is a factor listing probe IDs potentially confounded by cross-hybridisation to other parts of the genome[1]. It is used internally by `rmSNPandCH()`.

```
str(crosshyb)
## Factor w/ 30969 levels "cg00001510","cg00003969",...: 1 2 3 4 5 6 7 8 9 10 ...
```

`illuminaSNPs` is a `data.frame` containing probes that are potentially confounded by a SNP. It lists the SNPID, distance (in nucleotides) to the CpG in question, and minor allele frequency for each associated SNP

```
class(illuminaSNPs)
## [1] "data.frame"

dim(illuminaSNPs)
## [1] 153113      3

head(illuminaSNPs)
##              SNP Distance MinorAlleleFrequency
## cg00000108      rs9857774          16          0.056801
## cg00000109      rs9864492          17          0.010135
## cg00000165      rs76771611         25          0.027778
## cg00000292      rs62037371         31          0.333333
## cg00000769      rs74996347          51           0.5
## cg00000807 rs113612339;rs114523815    1, 38    0.500000, 0.025424
```

`myBetas` is a matrix of 450K probe beta values, matching to Homo Sapiens chromosome 20, sourced from the colon and rectal adenocarcinoma section of The Cancer Genome Atlas (TCGA) Repository. It contains 38 matched tumour/normal pairs.

```
class(myBetas)
## [1] "matrix"
dim(myBetas)
## [1] 10042    76
```

## Sources

- `myBetas` sourced from The Cancer Genome Atlas (TCGA) data repository, colon and rectal adenocarcinoma
- `illuminaSNPs` sourced from [http://supportres.illumina.com/documents/myillumina/88bab663-307c-444a-848e-0ed6c338ee4d/humanmethylation450\\_15017482\\_v.1.2.snpupdate.table.v3.txt](http://supportres.illumina.com/documents/myillumina/88bab663-307c-444a-848e-0ed6c338ee4d/humanmethylation450_15017482_v.1.2.snpupdate.table.v3.txt), accessed February 2014
- `crosshyb` sourced from <http://www.sickkids.ca/MS-Office-Files/Research/WeksbergLab/48639-non-specific-probes-Illumina450k.xlsx>, accessed February 2014

## References

- [1] Chen YA, Lemire M, Choufani S, Butcher DT, Grafodatskaya D, Zanke BW, Gallinger S, Hudson TJ, Weksberg R. Discovery of cross-reactive probes and polymorphic CpGs in the Illumina Infinium HumanMethylation450 microarray. *Epigenetics*. 2013 Jan 11;8(2).