

Package ‘SQN’

July 21, 2025

Type Package

Title Subset Quantile Normalization

Version 1.0.6

Date 2022-06-10

Author Zhijin(Jean) Wu, Martin Aryee

Maintainer Martin Aryee <martin.aryee@gmail.com>

Depends R (>= 2.6.0), mclust(>= 3.2), nor1mix(>= 1.0-7)

Description Normalization based a subset of negative control probes as described in 'Subset quantile normalization using negative control features'. Wu Z, Aryee MJ, J Comput Biol. 2010 Oct;17(10):1385-95 [PMID 20976876].

License LGPL (>= 2.0)

NeedsCompilation no

Repository CRAN

Date/Publication 2022-06-10 16:00:02 UTC

Contents

SQN	1
sqnData0	2

Index	4
--------------	----------

SQN	<i>subset quantile normalization</i>
-----	--------------------------------------

Description

This function performs normalization based on a subset of negative controls whose distribution is expected to be unchanged in various samples. There is no restriction on the behavior of the rest of the measurements.

Usage

```
SQN(y, N.mix = 5, ctrl.id, model.weight = 0.9)
```

Arguments

<code>y</code>	A matrix of unnormalized data.
<code>N.mix</code>	Number of normal distributions in the mixture approximation.
<code>ctrl.id</code>	index of controls. Must be a vector smaller than <code>nrow(y)</code>
<code>model.weight</code>	weight given to the parametric normal mixture model

Value

A matrix of normalized data

Author(s)

Zhijin Wu

References

Wu Z and Aryee M. Subset Quantile Normalization using Negative Control Features (2010) Journal of Computational Biology, 17(10)

Examples

```
require(mclust)
require(nor1mix)
data(sqnData0)
Ynorm=SQN(sqnData0,ctrl.id=1:1000) #after normalization
par(mfrow=c(1,2))
boxplot(sqnData0,main="before normalization")
boxplot(sqnData0[1:1000,],add=TRUE,col=3,boxwex=.4)

boxplot(Ynorm,main="after normalization")
boxplot(Ynorm[1:1000,],add=TRUE,col=3,boxwex=.4)
legend(.5,11,legend=c("probes for signal","negative control probes"),text.col=c(1,3),bg="white")
```

`sqnData0`

example data

Description

Simulated data with two samples, each with 1000 negative controls and 5000 signal bearing probes

Usage

```
data(sqnData0)
```

sqnData0

3

Format

A matrix with two columns

Index

* **datasets**

sqnData0, [2](#)

mix.qn (SQN), [1](#)

SQN, [1](#)

sqnData0, [2](#)