

# rbsurv

April 19, 2009

---

gliomaSet

*Gene expression and survival data of the patients with gliomas*

---

## Description

These data sets consist of gene expression and survival of the patients with gliomas. Note that it contains a subset of the data published in Freije et al. (2004).

## Source

Freije et al. (2004). Gene Expression Profiling of Gliomas Strongly Predicts Survival, Cancer Research, 64: 6503-6510.

---

rbsurv

*Robust likelihood-based survival modeling*

---

## Description

This selects survival-associated genes with microarray data.

## Usage

```
rbsurv(time, status, x, z=NULL, alpha=1, gene.ID=NULL, method="efron",  
       n.iter=10, n.fold=3, n.seq=1, seed=1234, max.n.genes=nrow(x))
```

## Arguments

time	a vector for survival times
status	a vector for survival status, 0=censored, 1=event
x	a matrix for expression values (genes in rows, samples in columns)
z	a matrix for risk factors
alpha	significance level for evaluating risk factors; significant risk factors included with the alpha level if $\alpha < 1$
gene.ID	a vector for gene IDs; if NULL, row numbers are assigned.

<code>method</code>	a character string specifying the method for tie handling. Choose one of "efron", "breslow", "exact". The default is "efron". If there are no tied death times all the methods are equivalent.
<code>n.iter</code>	the number of iterations for gene selection
<code>n.fold</code>	the number of partitions of samples
<code>n.seq</code>	the number of sequential runs or multiple models
<code>seed</code>	a seed for sample partitioning
<code>max.n.genes</code>	the maximum number of genes considered. If the number of the input genes is greater than the given number, it is reduced by fitting individual Cox models.

**Value**

<code>model</code>	survival-associated gene model
<code>n.genes</code>	number of genes
<code>n.samples</code>	number of samples
<code>method</code>	method for tie handling
<code>covariates</code>	covariates
<code>n.iter</code>	number of iterations for gene selection
<code>n.fold</code>	number of partitions of samples
<code>n.seq</code>	number of sequential runs or multiple models
<code>gene.list</code>	a list of genes included in the models

**Author(s)**

HyungJun Cho, Sukwoo Kim, Soo-heang Eo, and Jaewoo Kang

**References**

Cho H et al. Robust likelihood-based survival modeling for microarray gene expression data, submitted.

**Examples**

```
library(rbsurv)
data(gliomaSet)
x <- exprs(gliomaSet)
x <- log2(x)
time <- gliomaSet$Time
status <- gliomaSet$Status
z <- cbind(gliomaSet$Age, gliomaSet$Gender)

fit <- rbsurv(time=time, status=status, x=x, method="efron", max.n.genes=20, n.iter=10,
fit$model
```

# Index

\*Topic **datasets**

gliomaSet, 1

\*Topic **models**

rbsurv, 1

gliomaSet, 1

rbsurv, 1