Package 'mixsep'

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Version 0.2.1-2

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Title Forensic Genetics DNA Mixture Separation

Author Torben Tvedebrink <tvede@math.aau.dk>

Maintainer Torben Tvedebrink <tvede@math.aau.dk>

Description Separates DNA mixtures using a statistical model within a
greedy algorithm with a useful tcl/tk GUI.

Depends R (>= 2.0.0), tcltk, tcltk2, MASS, RODBC

License GPL (>= 2)

URL http://people.math.aau.dk/~tvede/mixsep

NeedsCompilation no

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R topics documented:

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mixsep-package   *Forensic Genetics DNA Mixture Separation*

Description

Separates DNA mixtures using a statistical model within a greedy algorithm. The use of the package
is controlled by an user friendly GUI (Graphical User Interface). The implementation is able to
separate two- and three-person DNA mixtures and provide diagnostic plots and parameter values.

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Details

Package:	mixsep
Version:	0.1-2
Date:	2011-01-06
Depends:	R (>= 2.0.0), tcltk, tcltk2, MASS, RODBC
License:	GPL version 2 or newer
URL:	http://people.math.aau.dk/~tvede/mixsep

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```
makeShortcut    Make Desktop shortcut on Windows operating system
mixsep          Starts the DNA mixture separation
wang            Two-person DNA mixture published by Wang et al. (2006)
```

After the package is loaded by library(mixsep) the GUI is started by writing mixsep() in the R prompt. However, on Windows operating systems it is recommended to use the makeShortcut()-function for easy and fast execution of the user interface.

Please refer to http://people.math.aau.dk~/tvede/mixsep for further details and descriptive guides and examples with screen shots.

Author(s)

Torben Tvedebrink <tvede@math.aau.dk>

Maintainer: Torben Tvedebrink <tvede@math.aau.dk>

References

http://people.math.aau.dk~/tvede/mixsep

T Tvedebrink, PS Eriksen, HS Mogensen and N Morling (2011). 'Identifying contributors of DNA mixtures by means of quantitative information of STR typing'. To Appear in 'Journal of Computational Biology'.

T Tvedebrink, PS Eriksen, HS Mogensen and N Morling (2011). 'mixsep - An R-package for separating forensic DNA mixtures and performing statistical analysis of EPGs'. Manuscript in preparation.

See Also

[RODBC](#)

Examples

```
## How to start the mixture separating tool in R: ##
  ## Not run:
   library(mixsep)
   mixsep()

## End(Not run)
```

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makeShortcut *Make Desktop shortcut on Windows operating system*

Description

Creates a shortcut on the desktop - Windows only. If the arguments are used the function enables the connection to a database (dbfile) and copies the sample-file 'wang.csv' to the desktop (wang2desktop). Please see below (and details) for description of using RODBC to connect to a database.

Usage

```
makeShortcut(dbfile="",wang2desktop=FALSE)
```

Arguments

dbfile   A file containing the information needed to connect to a database with the necessary data. The file is expected to have four (4) rows of the form: db = \"Connection information to the database\" dbtab = \"Which table should be attached\" dbcase = \"The case containing the unique 'case' identifier used to extract case specific information\" dbcols = \"Additional database columns needed to uniquely identify different PCR runs, re-runs, etc. with the same 'case' identifier\" However, lines with comments (identified by # are allowed). If a variable has more arguments these are separated by semicolons \";\", e.g. dbcols = \"PCR_run; Replicate\".

wang2desktop   Logical: If TRUE the example data file \'wang.csv\' is copied to the Windows desktop. Default is FALSE which only creates a shortcut for lauching the mixture separator.

Details

The package RODBC enables R to connect to a ODBC-connection. ODBC connections can either be connections to data files (e.g. Access- or Excel-files) or it can be a proper database. The mixsep() GUI connects to the ODBC source using the odbcDriverConnect-function, which takes different arguments depending on the data source. It is recommended to verify that the 'db'-argument provided in the 'dbfile'-file enables the connection to the database prior to using makeShortcut. Please refer to the help pages of the RODBC-package for further details.

Value

Creates a shortcut on the desktop. The function identifies the location of the mixsep-package in the file system and adds a .bat-file, which launches R in the terminal. This is the best and easiet way of using the mixture separator.

See Also

odbcDriverConnect

Examples

```
## run this in Windows to create shortcut on the desktop.
## Not run: makeShortcut()
```

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mixsep	*DNA mixture separation*

Description

Separates DNA mixtures using the algorithm and statistical model described in Tvedebrink et al. (2010), see references. The mixsep()-function invokes a GUI written in the tcl/tk-language. The GUI makes it easy to load data files, analyse the mixture with fixed profiles and interpret the results. Specialised plotting functions are made available for visual inspection of the data and proposed DNA profiles.

See also http://people.math.aau.dk/~tvede/mixsep/ for further details and guides with screen shots.

Usage

```
mixsep()
```

Value

Results of the mixture separation.

References

T Tvedebrink, PS Eriksen, HS Mogensen and N Morling (2011). 'Identifying contributors of DNA mixtures by means of quantitative information of STR typing'. To Appear in 'Journal of Computational Biology'.

Examples

```
## The file wang.csv in the installation directory may be used for exemplification.
## The 'wang.csv' is located in the folder quoted below:
cat(paste(find.package("mixsep"),"data",sep=.Platform$file.sep))
## Not run: mixsep()
```

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wang   *Two-person DNA mixture published by Wang et al. (2006)*

Description

Two-person DNA mixture typed on 13 STR loci.

The data is stored in a comma separated spread sheet file (.csv). The location of the file is returned by running the code below: cat(paste(find.package(\"mixsep\"),\"data\",sep=.Platform$file.sep)) It can be copied to the desktop by makeShortcut(wang2desktop=TRUE)

Format

A spread sheet with three columns: Locus, Allele and Area.

References

T Wang, N Xue and JD Birdwell (2006). 'Least-Square Deconvolution: A Framework for Interpreting Short Tandem Repeat Mixtures'. Journal of Forensic Science 51 (6): 1284-1297.

Examples

```
## Not run:
makeShortcut(TRUE) ## copies wang.csv to the desktop

## End(Not run)
```

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