

# Package ‘limmaGUI’

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**Version** 1.85.0

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**Title** GUI for limma Package With Two Color Microarrays

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**Imports** methods, grDevices, graphics, limma, R2HTML, tcltk, tkrplot,  
xtable, utils

**Description** A Graphical User Interface for differential expression analysis of two-  
color microarray data using the limma package.

**License** GPL (>=2)

**URL** <http://bioinf.wehi.edu.au/limmaGUI/>

**biocViews** GUI, GeneExpression, DifferentialExpression, DataImport,  
Bayesian, Regression, TimeCourse, Microarray, mRNAMicroarray,  
TwoChannel, BatchEffect, MultipleComparison, Normalization,  
Preprocessing, QualityControl

**git\_url** <https://git.bioconductor.org/packages/limmaGUI>

**git\_branch** devel

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## Contents

|                       |          |
|-----------------------|----------|
| LGchangeLog . . . . . | 2        |
| limmaGUI . . . . .    | 2        |
| <b>Index</b>          | <b>8</b> |

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 LGchangeLog

*LimmaGUI Change Log*


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**Description**

Write as text the most recent changes from the limmaGUI package changelog.

**Usage**

```
LGchangeLog(n=20)
```

**Arguments**

n                      integer, number of lines to write of changelog.

**Value**

No value is produced, but a number of lines of text are written to standard output.

**Author(s)**

Gordon Smyth

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 limmaGUI

*Graphical User Interface for the limma microarray package*


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**Description**

Graphical User Interface for the limma microarray package

**Usage**

```
AboutLimmaGUI()
AboutNormalization()
BChelp()
ChooseContrastsParameterization(parameterizationTreeIndex)
ChooseEbayesStatistic()
ChooseParameterization()
ChoosePlotSymbolByClicking(spotType, cex)
ChooseSpotType(parameterizationTreeIndex)
ComputeContrasts()
CopyGraph(img)
CreateNewParameterization()
DeleteContrastsParameterization()
deleteItemFromList(list1, itemName = NULL, index = NULL)
DeleteParameterization()
DupCorBoxPlot()
ebayesBoxPlots()
evalRcode()
ExportHTMLreport()
```

```
ExportTopTable()
fixSeps(string)
GetBackgroundCorrectionMethod()
GetBetweenArrayNormalizationMethod()
GetCoef(parameterizationTreeIndex, whichCoef = "onlyOne")
GetComponentstoExportInHTMLreport(parameterizationIndex = NULL)
GetContrastsParameterizationName()
GetContrastsParameterizationNames(parameterizationTreeIndex)
GetDEcutoff()
GetDesignOrContrasts(Design = FALSE, Contrasts = FALSE, NumContrasts = 0,
                      parameterizationIndex = 0)
GetGeneLabelsOptions()
GetImageAnalysisColumnHeadings()
GetImageProcessingFileType()
GetJpegOrPngParams(graphFileType)
GetJpegOrPngX11Params(graphFileType)
GetlimmaDataSetName()
GetlmFitMethod()
GetLowessType()
GetNEWxlim(xlim)
GetNormexpOffsetValue(CurrentNormexpOffsetValue)
GetNumParametersNoTargets()
getPackageVersion(pkgName)
GetParameterizationName()
GetParameterNames(parameterizationTreeIndex)
GetParametersAndOrContrasts(parameterizationTreeIndex, whatFor = "heat")
GetPlotLabels(plottitle = "", xlabel = "", ylabel = "")
GetPlotSize()
GetPlotTitle(plottitle = "")
GetPValueCutoff(p.value = 0.01)
GetReducedDuplicateSpacing(parameterizationTreeIndex)
GetRNATypesFrom.ContrastsFromDropDowns.String(string)
GetSlideNum()
GetSpotTypesForLinearModel()
GetSpotTypesIncludedNames(parameterizationTreeIndex)
GetWithinArrayNormalizationMethod()
GetWtAreaParams()
HeatDiagramDialog(parameterName)
HeatDiagramPlot()
HowManyDups()
HTMLplotUsingFunction(Caption = "", File = .HTML.file,
                      GraphRelativeDirectory = ".", GraphAbsoluteDirectory =
                      NULL, GraphFileName = "", GraphSaveAs = "png",
                      GraphBorder = 1, Align = "center", plotFunction =
                      NULL, Width = 600, Height = 600, PointSize = 12,
                      BG = "white", res = 72, ...)
ImageArrayPlot()
ImageArrayPlotDialog(slidenum)
ImportMA()
ImportMADialog()
initGlobals()
InitNewParameterization()
```

```

limmaGUI(BigfontsForlimmaGUIpresentation = FALSE)
limmaHelp()
lmFitMethodHelp()
LogOddsPlot()
MAPlot()
MAPlotAvg()
MBoxPlot()
MMPlot()
NewLimmaFile()
NormalizeNow()
nstrstr(haystack, needle)
onDestroy()
onExit()
OpenALimmaFile(FileName)
OpenGALandTargetsandSpotTypesfiles()
OpenGALFile()
OpenLimmaFile()
OpenSpotTypesFile()
OpenTargetsFile()
plotMAColorCoded()
PlotOptions()
PrintTipGroupMAPlot()
QQTplot()
read.marrayTools(MFile,AFile, path, verbose, sep, quote, header, ...)
ReadImageProcessingFiles()
Require(pkg)
Resize(img, plotFunction)
SaveAsLimmaFile()
SaveGraphAsJpeg(initialfile, plotFunction)
SaveGraphAsPDF(initialfile, plotFunction)
SaveGraphAsPNG(initialfile, plotFunction)
SaveGraphAsPostscript(initialfile, plotFunction)
SaveLimmaFile()
SelectPlotSymbols(SpotTypes)
SetLayoutParameters()
SetupPlotKeyBindings(tt, img)
SetupPlotMenus(tt, initialfile, plotFunction, img)
SetWD()
showChangeLog()
showCitations()
showGAL()
showTopTable(..., export = FALSE)
SimplifyContrastsExpression(string)
strstr(haystack, needle)
tclArrayVar()
TclRequire(tclPkg)
TryReadImgProcFile(expr)
UpdateSpotTypesStatus()
UpDownOrBoth()
VennDiagramPlot()
ViewDesignOrContrastsMatrixAsPairs(DesignOrContrasts, designOrContrastsList,
                                     parameterizationIndex, contrastsParameterizationIndex

```

```

        = NULL)
ViewDesignOrContrastsMatrixInTable(DesignOrContrasts, designOrContrastsList,
        parameterizationIndex, contrastsParameterizationIndex
        = NULL)
ViewExistingContrastsParameterization()
ViewExistingParameterization()
ViewRNATargets()
ViewSpotTypes()

```

## Arguments

BigfontsForlimmaGUIpresentation  
 If set to TRUE, larger fonts are used. However, some font sizes are not controlled by limmaGUI and so must be adjusted in the operating system, e.g. in the Control Panel in Windows under Display, Appearance.

... HTMLplotUsingFunction:arg15, showTopTable:arg1

AFile Flat-file of log-intensities output by marrayTools

Align HTMLplotUsingFunction:arg8

BG HTMLplotUsingFunction:arg13

Caption HTMLplotUsingFunction:arg1

cex ChoosePlotSymbolByClicking:arg2

contrastsParameterizationIndex  
 ViewDesignOrContrastsMatrixInTable:arg4, ViewDesignOrContrastsMatrixAsPairs:arg4

Contrasts GetDesignOrContrasts:arg2

CurrentNormexpOffsetValue  
 GetNormexpOffsetValue:arg1

designOrContrastsList  
 ViewDesignOrContrastsMatrixInTable:arg2, ViewDesignOrContrastsMatrixAsPairs:arg2

DesignOrContrasts  
 ViewDesignOrContrastsMatrixInTable:arg1, ViewDesignOrContrastsMatrixAsPairs:arg1

Design GetDesignOrContrasts:arg1

export showTopTable:arg2

expr TryReadImgProcFile:arg1

FileName A file name.

File HTMLplotUsingFunction:arg2

GraphAbsoluteDirectory  
 HTMLplotUsingFunction:arg4

GraphBorder HTMLplotUsingFunction:arg7

GraphFileName HTMLplotUsingFunction:arg5

graphFileType GetJpegOrPngParams:arg1, GetJpegOrPngX11Params:arg1

GraphRelativeDirectory  
 HTMLplotUsingFunction:arg3

GraphSaveAs HTMLplotUsingFunction:arg6

|                           |                                                                                                                                                                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| haystack                  | nstrstr:arg1, strstr:arg1                                                                                                                                                                                                                  |
| header                    | See help for read.table                                                                                                                                                                                                                    |
| Height                    | HTMLplotUsingFunction:arg11                                                                                                                                                                                                                |
| img                       | SetupPlotMenus:arg1, Resize:arg1, CopyGraph:arg1, SetupPlotKeyBindings:arg2                                                                                                                                                                |
| index                     | deleteItemFromList:arg1                                                                                                                                                                                                                    |
| initialfile               | SaveGraphAsJpeg:arg1, SaveGraphAsPDF:arg1, SaveGraphAsPNG:arg1, SaveGraphAsPostscript:arg1, SetupPlotMenus:arg2                                                                                                                            |
| itemName                  | deleteItemFromList:arg1                                                                                                                                                                                                                    |
| list1                     | deleteItemFromList:arg1                                                                                                                                                                                                                    |
| MFile                     | Flat-file of log-ratios output by marrayTools                                                                                                                                                                                              |
| needle                    | nstrstr:arg2, strstr:arg2                                                                                                                                                                                                                  |
| NumContrasts              | GetDesignOrContrasts:arg3                                                                                                                                                                                                                  |
| p.value                   | A p-value cutoff.                                                                                                                                                                                                                          |
| parameterizationIndex     | GetDesignOrContrasts:arg4, GetComponentsToExportInHTMLreport:arg1, GetDesignOrContrasts:arg4, ViewDesignOrContrastsMatrixInTable:arg3, ViewDesignOrContrastsMatrixAsPairs:arg3                                                             |
| parameterizationTreeIndex | GetParametersAndOrContrasts:arg1, ChooseContrastsParameterization:arg1, ChooseSpotType:arg1, GetCoef:arg1, GetParameterNames:arg1, GetReducedDuplicateSpacing:arg1, GetContrastsParameterizationNames:arg1, GetSpotTypesIncludedNames:arg1 |
| parameterName             | HeatDiagramDialog:arg1                                                                                                                                                                                                                     |
| path                      | Path to the directory containing the MFile and AFile                                                                                                                                                                                       |
| pkgName                   | getPackageVersion:arg1                                                                                                                                                                                                                     |
| pkg                       | Require:arg1                                                                                                                                                                                                                               |
| plotFunction              | SetupPlotMenus:arg1, HTMLplotUsingFunction:arg9, Resize:arg1, SaveGraphAsJpeg:arg2, SaveGraphAsPDF:arg2, SaveGraphAsPNG:arg2, SaveGraphAsPostscript:arg2                                                                                   |
| plottitle                 | GetPlotLabels:arg1, GetPlotTitle:arg1                                                                                                                                                                                                      |
| PointSize                 | HTMLplotUsingFunction:arg12                                                                                                                                                                                                                |
| quote                     | See help for read.table                                                                                                                                                                                                                    |
| res                       | HTMLplotUsingFunction:arg14                                                                                                                                                                                                                |
| sep                       | Column separator. ("t" for tab-delimited text)                                                                                                                                                                                             |
| slidenum                  | ImageArrayPlotDialog:arg1                                                                                                                                                                                                                  |
| spotType                  | ChoosePlotSymbolByClicking:arg1                                                                                                                                                                                                            |
| SpotTypes                 | SelectPlotSymbols:arg1                                                                                                                                                                                                                     |
| string                    | fixSeps:arg1, SimplifyContrastsExpression:arg1, GetRNATypesFrom.ContrastsFromDropDowns.Stri                                                                                                                                                |
| tc1Pkg                    | TclRequire:arg1                                                                                                                                                                                                                            |
| tt                        | SetupPlotKeyBindings:arg1, SetupPlotMenus:arg1                                                                                                                                                                                             |
| verbose                   | Optional diagnostic messages                                                                                                                                                                                                               |
| whatFor                   | GetParametersAndOrContrasts:arg2                                                                                                                                                                                                           |
| whichCoef                 | GetCoef:arg2                                                                                                                                                                                                                               |
| Width                     | HTMLplotUsingFunction:arg10                                                                                                                                                                                                                |
| xlabel                    | GetPlotLabels:arg2                                                                                                                                                                                                                         |
| xlim                      | GetNEWxlim:arg1                                                                                                                                                                                                                            |
| ylabel                    | GetPlotLabels:arg3                                                                                                                                                                                                                         |

**Details**

This function launches a Graphical User Interface for the limma package by Gordon Smyth. The GUI uses Tk widgets (via the R TclTk interface by Peter Dalgaard) in order to provide a simple interface to the limma functions for linear modelling of microarrays and identification of differentially expressed genes.

**Author(s)**

James Wettenhall

# Index

## \* documentation

LGchangeLog, 2

AboutLimmaGUI (limmaGUI), 2

AboutNormalization (limmaGUI), 2

BChelp (limmaGUI), 2

ChooseContrastsParameterization (limmaGUI), 2

chooseDir (limmaGUI), 2

ChooseEbayesStatistic (limmaGUI), 2

ChooseParameterization (limmaGUI), 2

ChoosePlotSymbolByClicking (limmaGUI), 2

ChooseSpotType (limmaGUI), 2

ComputeContrasts (limmaGUI), 2

ComputeLinearModelFit (limmaGUI), 2

CopyGraph (limmaGUI), 2

CreateNewParameterization (limmaGUI), 2

CreateTreeAndList (limmaGUI), 2

DeleteContrastsParameterization (limmaGUI), 2

deleteItemFromList (limmaGUI), 2

DeleteParameterization (limmaGUI), 2

DupCorBoxPlot (limmaGUI), 2

ebayesBoxPlots (limmaGUI), 2

evalRcode (limmaGUI), 2

ExportAvalues (limmaGUI), 2

ExportHTMLreport (limmaGUI), 2

ExportMvalues (limmaGUI), 2

ExportTopTable (limmaGUI), 2

fixSeps (limmaGUI), 2

GetBackgroundCorrectionMethod (limmaGUI), 2

GetBetweenArrayNormalizationMethod (limmaGUI), 2

GetCoef (limmaGUI), 2

GetComponentsToExportInHTMLreport (limmaGUI), 2

GetContrastsParameterizationName (limmaGUI), 2

GetContrastsParameterizationNames (limmaGUI), 2

GetDEcutoff (limmaGUI), 2

GetDesignOrContrasts (limmaGUI), 2

GetGeneLabelsOptions (limmaGUI), 2

GetGenePixFlagWeightings (limmaGUI), 2

GetImageAnalysisColumnHeadings (limmaGUI), 2

GetImageProcessingFileType (limmaGUI), 2

GetJpegOrPngParams (limmaGUI), 2

GetJpegOrPngX11Params (limmaGUI), 2

GetlimmaDataSetName (limmaGUI), 2

GetlmFitMethod (limmaGUI), 2

GetLowessType (limmaGUI), 2

GetNEWxlim (limmaGUI), 2

GetNormexpOffsetValue (limmaGUI), 2

GetNumParametersNoTargets (limmaGUI), 2

getPackageVersion (limmaGUI), 2

GetParameterizationName (limmaGUI), 2

GetParameterNames (limmaGUI), 2

GetParametersAndOrContrasts (limmaGUI), 2

GetPlotLabels (limmaGUI), 2

GetPlotSize (limmaGUI), 2

GetPlotTitle (limmaGUI), 2

GetPValueCutoff (limmaGUI), 2

GetReducedDuplicateSpacing (limmaGUI), 2

GetRNATypesFrom.ContrastsFromDropDowns.String (limmaGUI), 2

GetSlideNum (limmaGUI), 2

GetSpotTypesForLinearModel (limmaGUI), 2

GetSpotTypesIncludedNames (limmaGUI), 2

GetWithinArrayNormalizationMethod (limmaGUI), 2

GetWtAreaParams (limmaGUI), 2

HeatDiagramDialog (limmaGUI), 2

HeatDiagramPlot (limmaGUI), 2

HowManyDups (limmaGUI), 2

HTMLplotUsingFunction (limmaGUI), 2

ImageArrayPlot (limmaGUI), 2

ImageArrayPlotDialog (limmaGUI), 2

imageplotlimmaGUI (limmaGUI), 2

ImportMA (limmaGUI), 2  
 ImportMADialog (limmaGUI), 2  
 initGlobals (limmaGUI), 2  
 InitNewParameterization (limmaGUI), 2  
  
 LGchangeLog, 2  
 limmaGUI, 2  
 limmaGUIhelp (limmaGUI), 2  
 limmaHelp (limmaGUI), 2  
 lmFitMethodHelp (limmaGUI), 2  
 LogOddsPlot (limmaGUI), 2  
  
 MAPlot (limmaGUI), 2  
 MAPlotAvg (limmaGUI), 2  
 MBoxPlot (limmaGUI), 2  
 MMPlot (limmaGUI), 2  
  
 NewLimmaFile (limmaGUI), 2  
 NormalizeNow (limmaGUI), 2  
 nstrstr (limmaGUI), 2  
  
 onDestroy (limmaGUI), 2  
 onExit (limmaGUI), 2  
 OpenALimmaFile (limmaGUI), 2  
 OpenGALandTargetsandSpotTypesfiles  
     (limmaGUI), 2  
 OpenGALFile (limmaGUI), 2  
 OpenLimmaFile (limmaGUI), 2  
 OpenSpotTypesFile (limmaGUI), 2  
 OpenTargetsFile (limmaGUI), 2  
  
 plotMAColorCoded (limmaGUI), 2  
 PlotOptions (limmaGUI), 2  
 PrintTipGroupMAPlot (limmaGUI), 2  
  
 QQTplot (limmaGUI), 2  
  
 read.marrayTools (limmaGUI), 2  
 readGALLimmaGUI (limmaGUI), 2  
 ReadImageProcessingFiles (limmaGUI), 2  
 Require (limmaGUI), 2  
 Resize (limmaGUI), 2  
  
 SaveAsLimmaFile (limmaGUI), 2  
 SaveGraphAsJpeg (limmaGUI), 2  
 SaveGraphAsPDF (limmaGUI), 2  
 SaveGraphAsPNG (limmaGUI), 2  
 SaveGraphAsPostscript (limmaGUI), 2  
 SaveLimmaFile (limmaGUI), 2  
 SelectPlotSymbols (limmaGUI), 2  
 SetLayoutParameters (limmaGUI), 2  
 SetupPlotKeyBindings (limmaGUI), 2  
 SetupPlotMenus (limmaGUI), 2  
 SetWD (limmaGUI), 2  
  
 showChangeLog (limmaGUI), 2  
 showCitations (limmaGUI), 2  
 showGAL (limmaGUI), 2  
 showTopTable (limmaGUI), 2  
 SimplifyContrastsExpression (limmaGUI),  
     2  
 strstr (limmaGUI), 2  
  
 tclArrayVar (limmaGUI), 2  
 TclRequire (limmaGUI), 2  
 Try (limmaGUI), 2  
 TryReadImgProcFile (limmaGUI), 2  
  
 UpdateSpotTypesStatus (limmaGUI), 2  
 UpDownOrBoth (limmaGUI), 2  
  
 vennDiagramlimmaGUI (limmaGUI), 2  
 VennDiagramPlot (limmaGUI), 2  
 ViewDesignOrContrastsMatrixAsPairs  
     (limmaGUI), 2  
 ViewDesignOrContrastsMatrixInTable  
     (limmaGUI), 2  
 ViewExistingContrastsParameterization  
     (limmaGUI), 2  
 ViewExistingParameterization  
     (limmaGUI), 2  
 ViewRNATargets (limmaGUI), 2  
 ViewSpotTypes (limmaGUI), 2  
  
 WithinBetweenOrBoth (limmaGUI), 2  
 wtflags2 (limmaGUI), 2