

oneChannelGUI Package Installation

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1 Installation

It is important to install additional software other than R and Bioconductor libraries, for the complete functionality of oneChannelGUI.

The external tools and data needed to run exon array analysis in oneChannelGUI are shown in figure 1.

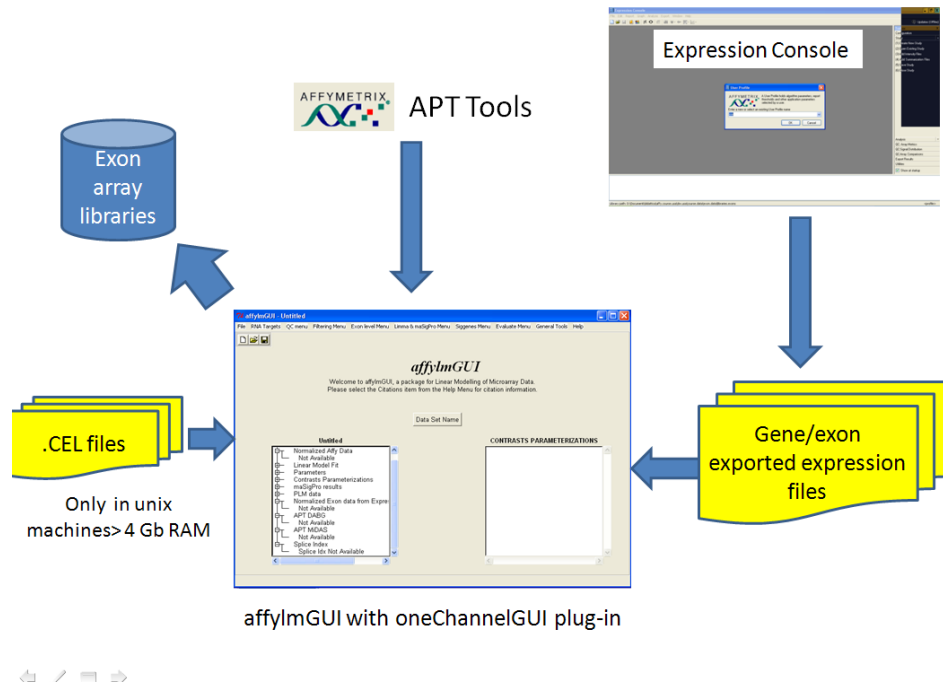


Figure 1: External tools needed for exon array analysis when oneChannelGUI add-on is loaded in affyGUI.

1.1 Windows users

The latest version of R need to be installed. It can be downloaded at: <http://www.r-project.org/> oneChannelGUI needs the installation of the following packages:

```
> packageDescription("oneChannelGUI")$Depends
```

```
[1] "Biobase, affyilmGUI, tkWidgets, GOstats, AnnotationDbi"
```

oneChannelGUI suggests the installation of the following packages:

```
> packageDescription("oneChannelGUI")$Suggests
```

```
[1] "annotate, genefilter, maSigPro, pamr, pdmclass,\nRgraphviz, affy ,annaffy, affyPLM"
```

In order to install all the Bioconductor packages needed to run oneChannelGUI a specific R function can be downloaded from <http://www.bioinformatica.unito.it/oneChannelGUI/> To use it user needs to open an R session on a computer connected to internet and copy and paste the following code:

```
> source("http://bioconductor.org/biocLite.R")
>biocLite(c("affyilmGUI", "limma", "tcltk", "annotate", "annaffy", "genefilter",
"affyPLM", "affy", "GO", "graph", "GOstats", "Biobase", "ssize", "sizepower",
"tkrplot", "R2HTML", "xtable", "ABarray", "beadarray", "maSigPro", "multtest",
"siggenes", "hgu133a.db", "hgu133a2.db", "hgu133acdf", "hgu133a2cdf",
"hgu133aprobe", "hgu133a2probe", "hgu133plus2.db", "hgu133plus2cdf",
"hgu133plus2probe", "hgu95av2cdf", "hgu95av2probe", "pamr", "pdmclass",
"RColorBrewer", "genepLOTter", "Rgraphviz", "widgetTools", "tkWidgets", "DynDoc",
"RankProd", "org.Hs.eg.db", "org.Mm.eg.db", "org.Rn.eg.db", "AffyCompatible",
"Biostrings", "metaArray", "illuminaHumanv1ProbeID.db",
"illuminaHumanv2ProbeID.db", "illuminaHumanv3ProbeID.db", "oneChannelGUI",
"biomaRt", "MiPP"))
```

oneChannelGUI inherits the core graphical interface of affyilmGUI. This interface need, under windows, the installation of TCL/TK libraries that can be download from: <http://www.activestate.com/Products/ActiveTcl/>

To load Hs/Mm/Rn exon 1.0 ST Affymatrix arrays users need to install APT tools 1.8.5. The windows binaries can be downloaded from: <http://www.affymetrix.com/support/developer/powertools/index.affx> In addition library files for gene/exon arrays are directly downloaded and installed locally from oneChannelGUI interface, the first time an Exon 1.0 ST or Gene 1.0 ST analysis is started. Or using the function *oneChannelGUI: Set library folder and install Affy gene/Exon library files* present in the General tools Menu.

*IMPORTANT APT TOOLS AND EXON LIBRARY FILES NEED TO BE LOCATED
IN A FOLDER CHARACTERIZED BY A PATH WITHOUT SPACES*

C:/apt.1.8.0 THIS IS OK

C:/PROGRAM FILES/APT.1.8.0 STARTING APT TOOLS FROM oneChannelGUI will produce an error

Furthermore, blast executable from `ftp://ftp.ncbi.nih.gov/blast/executables/LATEST` need to be installed in a blast folder into the apt folder, e.g. `C:/apt/blast`. This is mandatory for exon level analysis to map alternative spliced exon-level probesets to reference sequences.

1.2 Unix users

The packages to be downloaded for unix users are those indicated for windows users unless for the TCL/Tk libraries.

To use Tcl/Tk then the interface package tcltk must be installed into R. If an R package uses Tcl/Tk then Tcl/Tk must be installed on the OS before the R package can be installed into R. Furthermore, these two Tcl/Tk packages are needed by oneChannelGUI, affyImGUI and limmaGUI for their functionality:

1. BWidget, this is a package written entirely in the tcl scripting language and hence is not compiled. Consequently it is the same on any platform and should be in the Tcl/Tk path.
2. Tktable, this package has some code written in C and hence is a compiled package. It therefore is different for each type of CPU and OS.

It is possible to encounter problems in installing those libraries on x64 machines. For this reason I found quite useful the suggestions of Keith Satterley (24 Apr 2007) subject: Re: [Bioc-devel] Tcl/TK package "Bwidget" available on the Bioconductor mailing list.