


Prepare the solution for *one* of the following assignments and mail it to `alexander.ploner@ki.se`. A valid solution includes a) a short report containing the graphs you feel are relevant, together with a short explanation what they show, b) an R script that generates all graphs and figures used in the report, and (possibly) c) any extra data files that you need to create in order to run the R script.

Data files referred to in the assignments can be downloaded from the course web page at `www.meb.ki.se/~aleplo/R2007`.

1. Use the same file `Golub.RData` as in Assignment 05/1, using the same preprocessing (05/1a, see also lecture).
  - (a) Identify genes that are differentially expressed between ALL and AML patients, at a significance level  $\alpha = 0.05$  for adjusted p-values.
  - (b) Compute the empirical (global) FDR for this comparison, using the function `E0C` in package `OCplus` and the same  $\alpha$ . How does this change the list of differentially expressed genes?
  - (c) Compute the local fdr for this comparison, using function `fdr1d` in package `OCplus` and again  $\alpha = 0.05$ . Compare the results with the global FDR using the function `OCshow`.
  - (d)  Re-do the analyses above using a different test statistic – either a Welch t-statistic, or the Wilcoxon test statistic. *Hint:* `mt.teststat` in package `multtest` calculates all kinds of test statistics.
2. Take any assignment you have handed in previously, and re-do the analysis as a literate programming exercise, using either `LATEX` and `Sweave`, or OpenOffice and `odfWeave`. Make sure to include both the source file and the output file in your hand-in.