HMM Tract Summary

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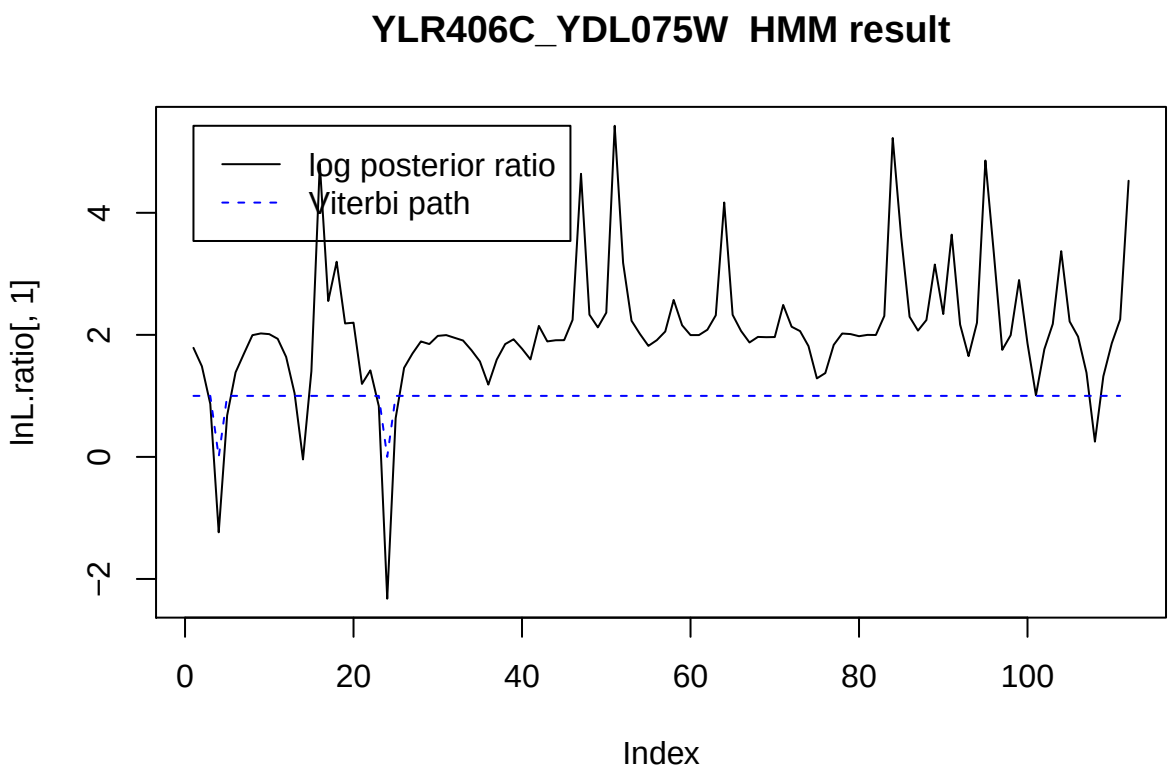
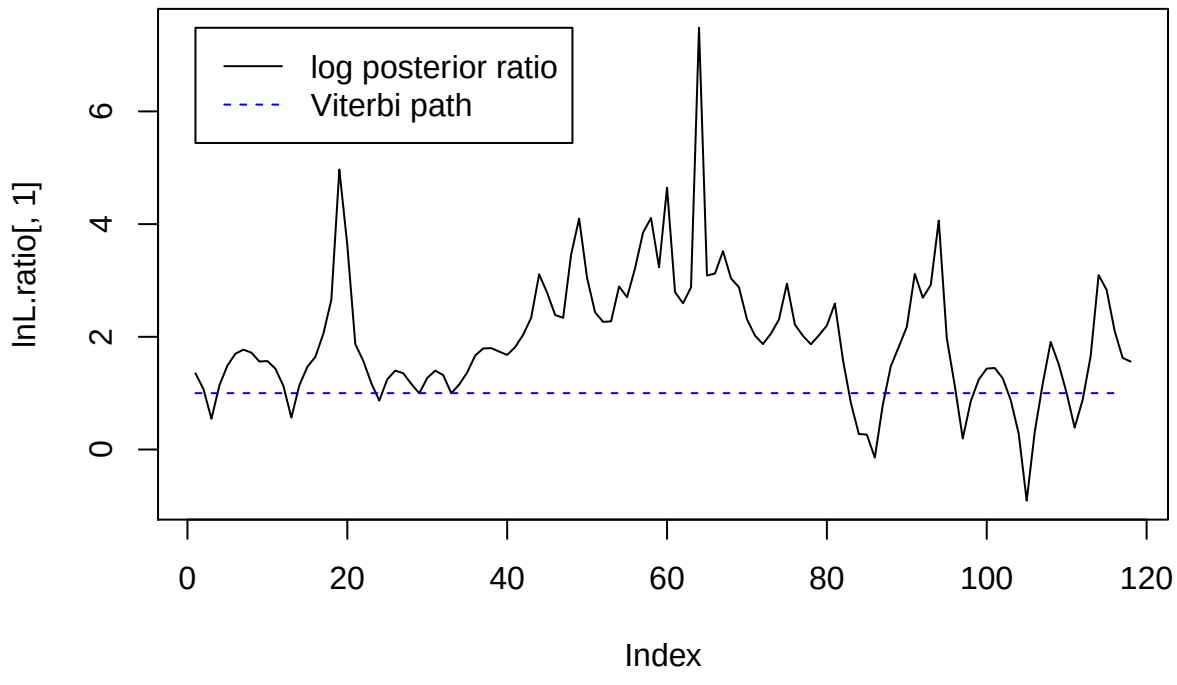
Now plot posterior log likelihood ratio: $log(\frac{Pr(S_i=1|x)}{Pr(S_i=0|x)}$.

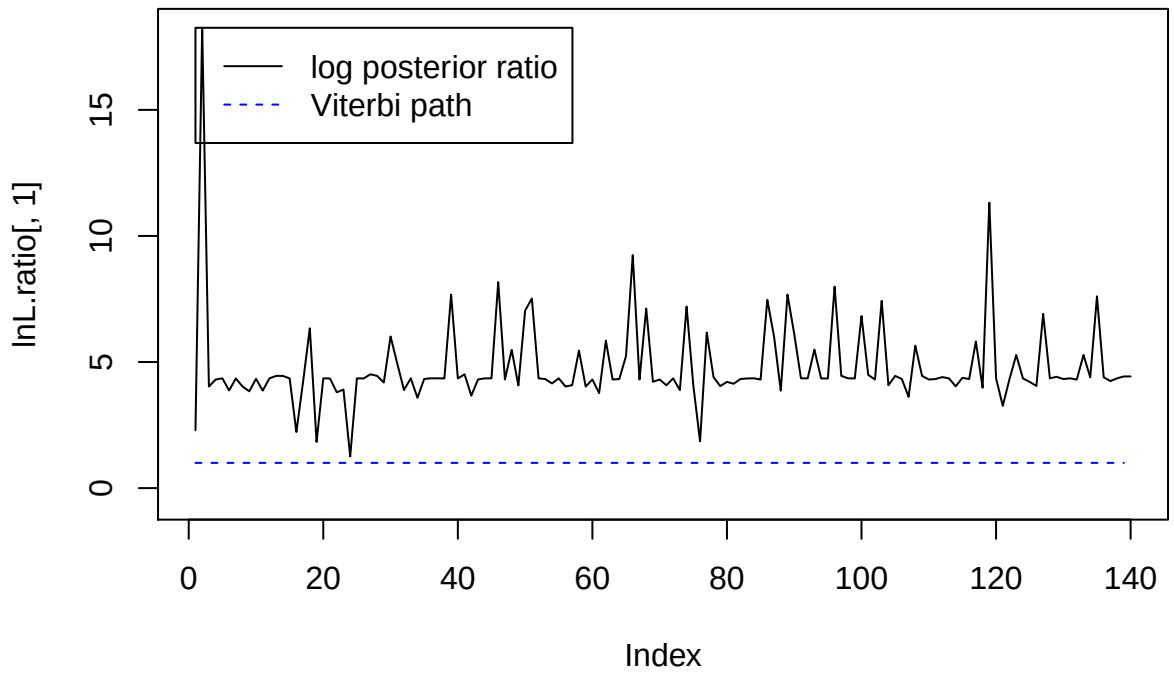
```
rm(list=ls())  # clean up workspace
setwd("/Users/xji3/GitFolders/YeastIGCTract/HMMTract/")
filtered.pairs <- readLines('../Filtered_pairs.txt')

summary.mat <- read.table("./HMM_tract_MG94_nonclock_summary.txt")
rownames(summary.mat) <- filtered.pairs
colnames(summary.mat) <- c("lnL", "max lnL", "tract length", "Pr(S_0)", "Pr(S_1)")

for (paralog in filtered.pairs){
  lnL.ratio <- as.vector(read.table(paste("./summary/", paralog, "_MG94_nonclock_HMM_log_posterior_ratio.txt", sep = "")))
  Viterbi.path <- as.vector(read.table(paste("./summary/", paralog, "_MG94_nonclock_HMM_Viterbi_path.txt", sep = "")))

  plot(lnL.ratio[, 1], type = "l", col = "black", lty = 1,
       main = paste(paralog, " HMM result"),
       ylim = c(min(-0.5, min(lnL.ratio)), max(lnL.ratio)))
  lines(1:dim(Viterbi.path)[1], Viterbi.path[, 1], lty = 2, col = "blue")
  legend(1, max(lnL.ratio), legend = c("log posterior ratio", "Viterbi path"),
         lty = c(1, 2), col = c("black", "blue"))
  print(summary.mat[paralog, ])
}
```



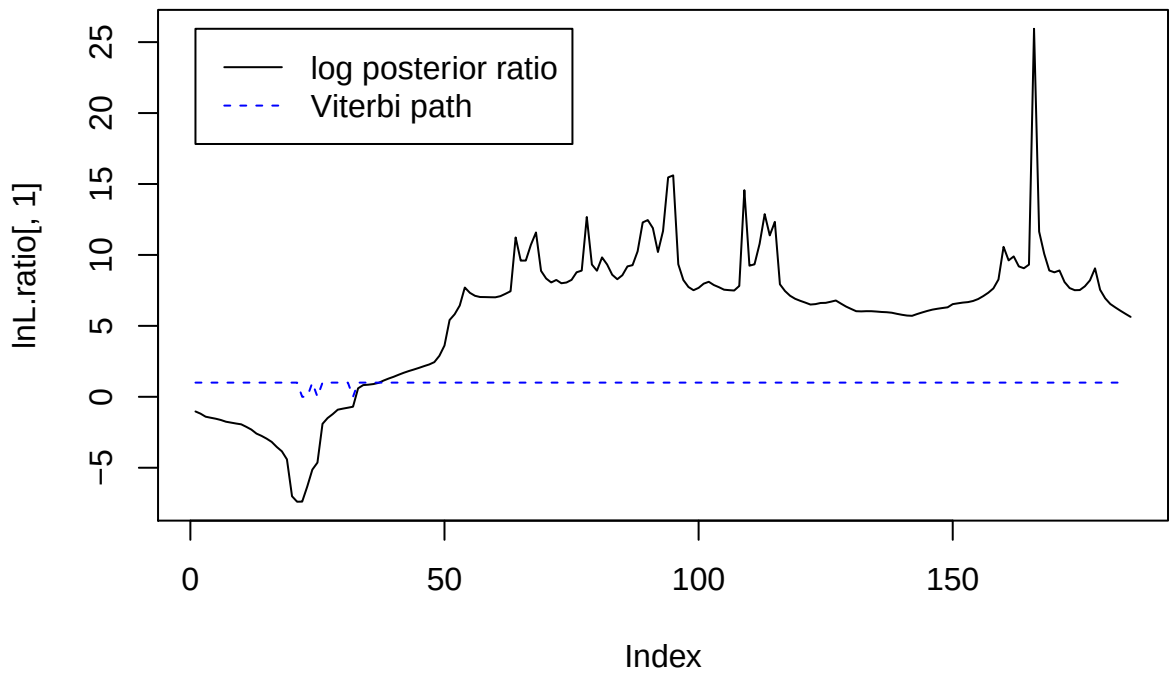

```
##                        lnL   max lnL tract length   Pr(S_0)   Pr(S_1)
## YLR406C_YDL075W -1178.099 -1178.066     6.155002 0.1281115 0.8718885
```



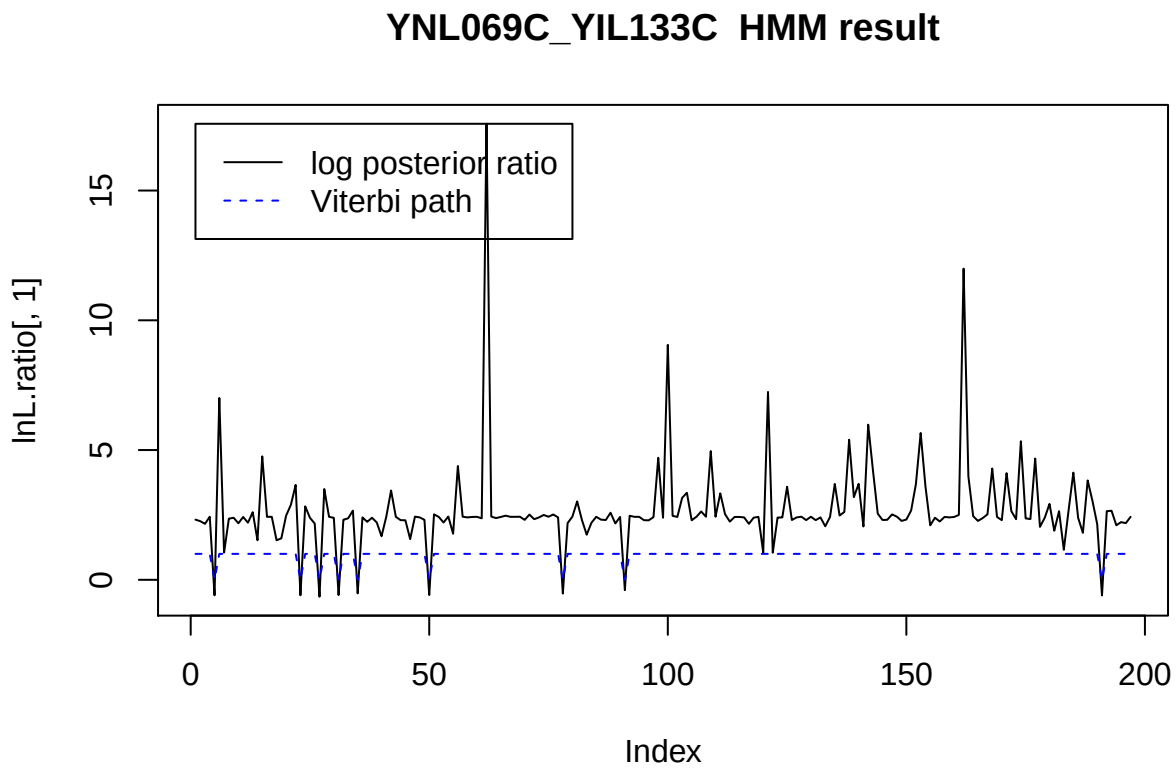

```
##                        lnL   max lnL tract length   Pr(S_0)   Pr(S_1)
## YER131W_YGL189C -1205.185 -1204.908     11.24539 0.1495886 0.8504114
```



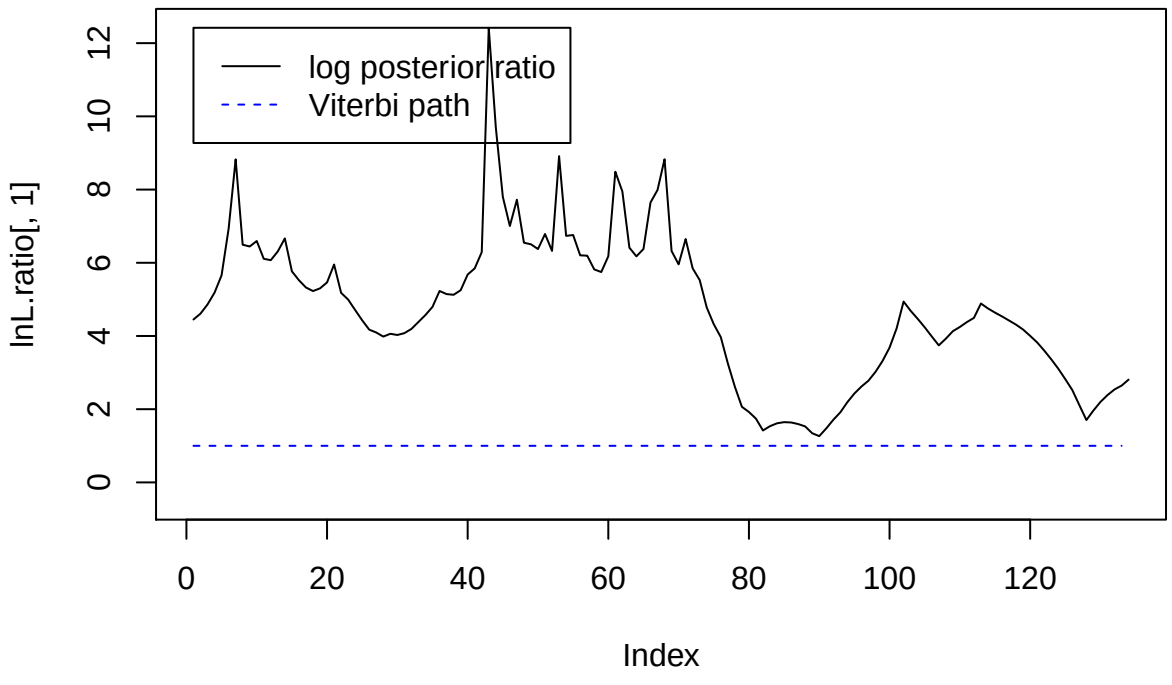

```
##                        lnL   max lnL tract length    Pr(S_0)   Pr(S_1)
## YML026C_YDR450W -1377.245 -1377.245            3 0.01461544 0.9853846
```



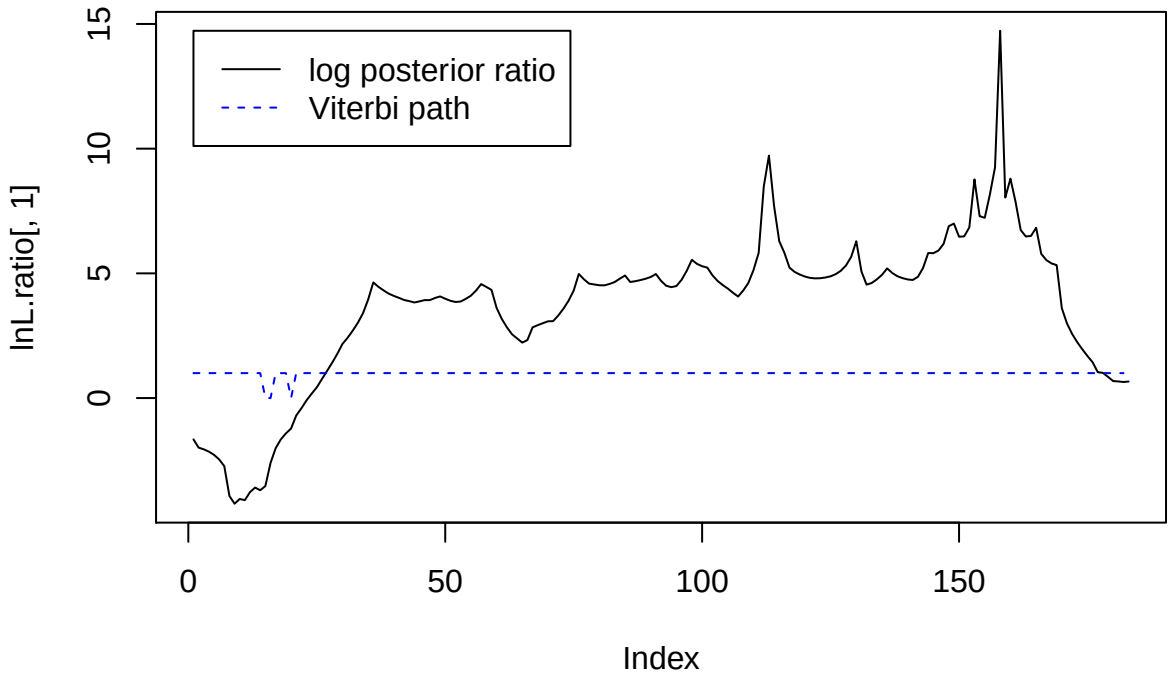

```
##                       lnL   max lnL tract length    Pr(S_0)   Pr(S_1)
## YNL301C_YOL120C -2139.308 -2132.814     302.8955 0.01965931 0.9803407
```



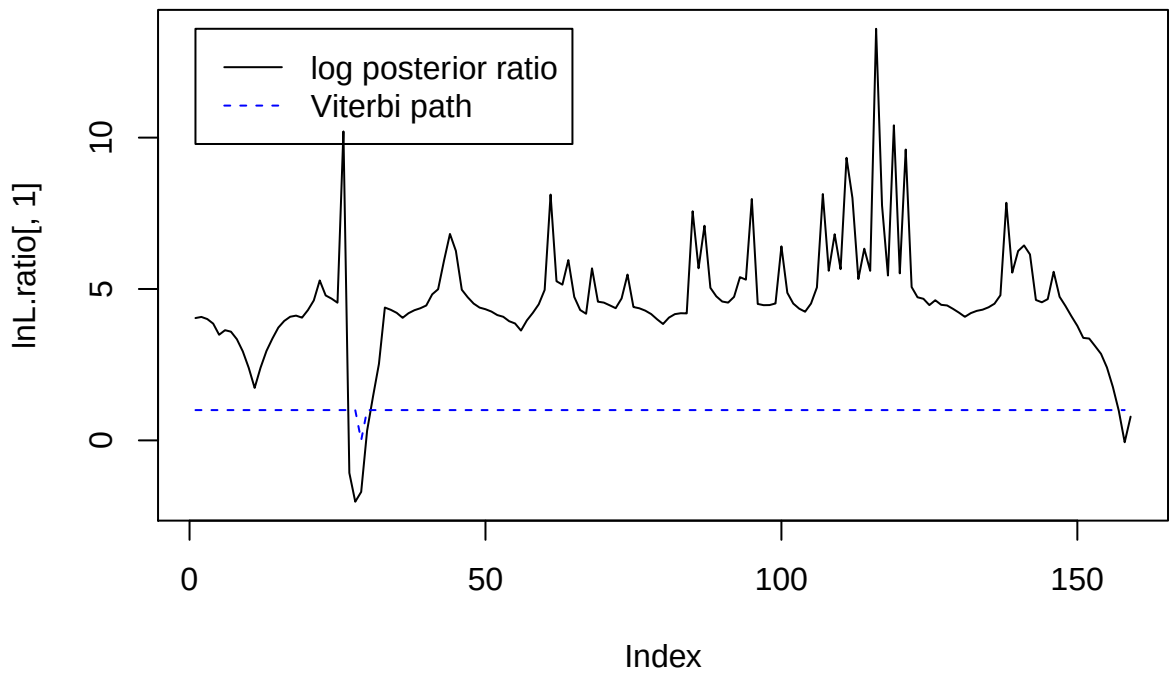

```
##                       lnL   max lnL tract length    Pr(S_0)   Pr(S_1)
## YNL069C_YIL133C -2322.829 -2322.829            3 0.09060675 0.9093933
```



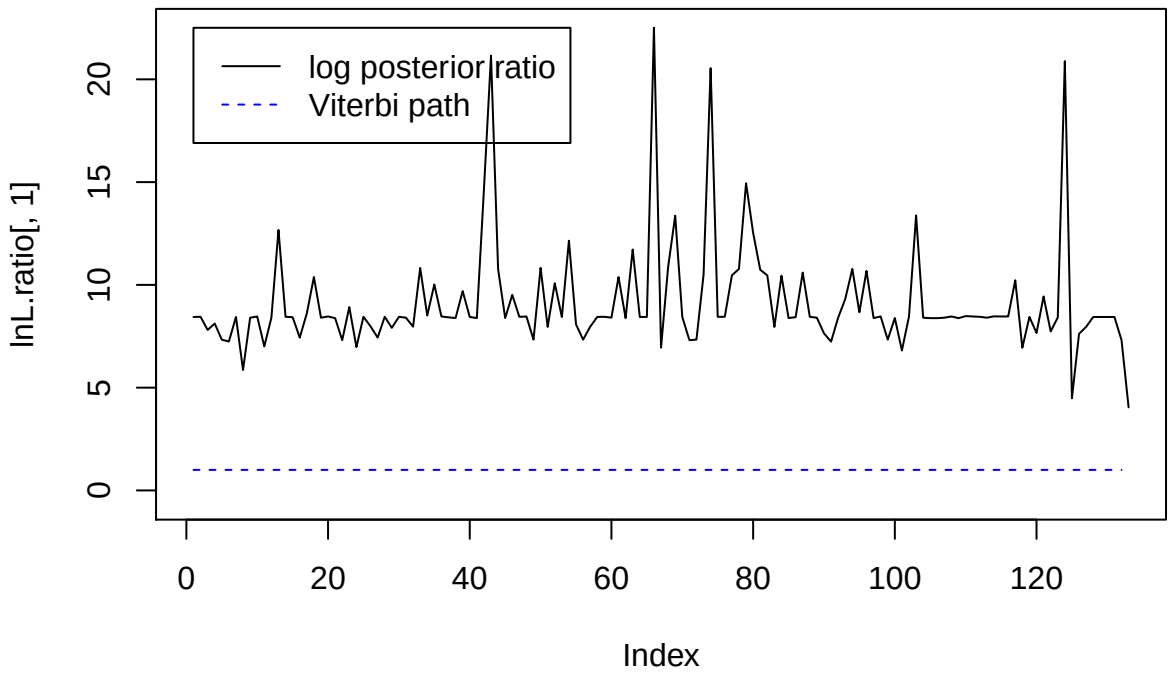

```
##                        lnL   max lnL tract length    Pr(S_0)   Pr(S_1)
## YMR143W_YDL083C -1209.752 -1209.687     62.08175 0.02365226 0.9763477
```



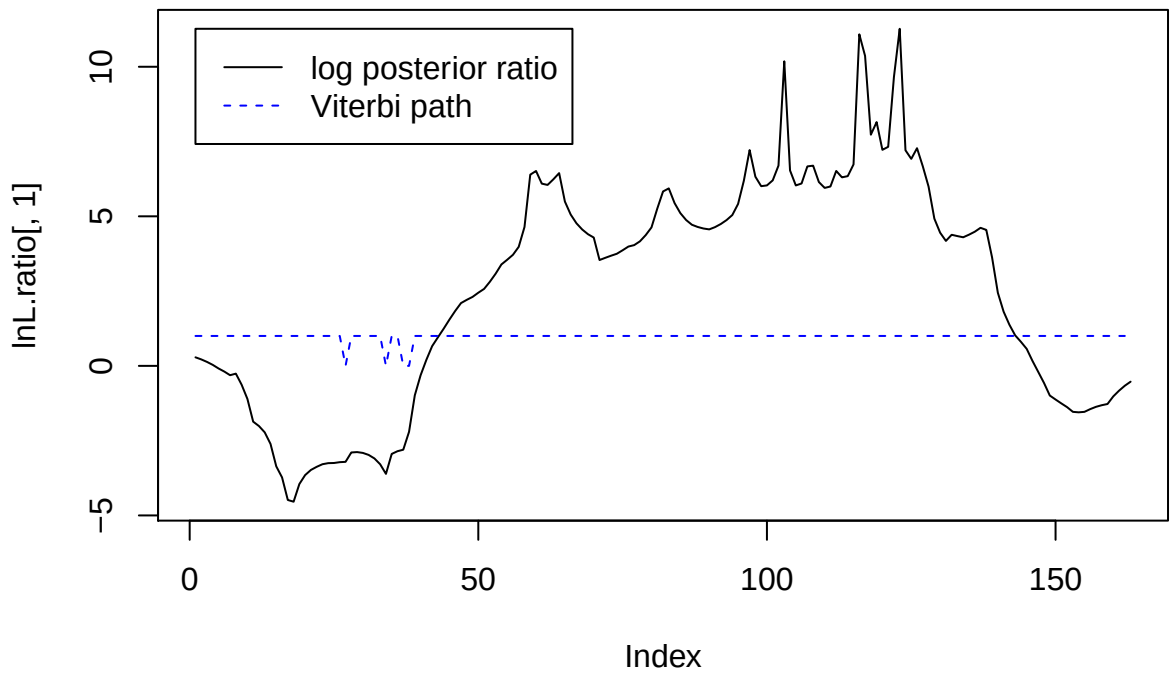

```
##                        lnL   max lnL tract length   Pr(S_0)   Pr(S_1)
## YJL177W_YKL180W -1837.058 -1834.218     137.4013 0.1163812 0.8836188
```



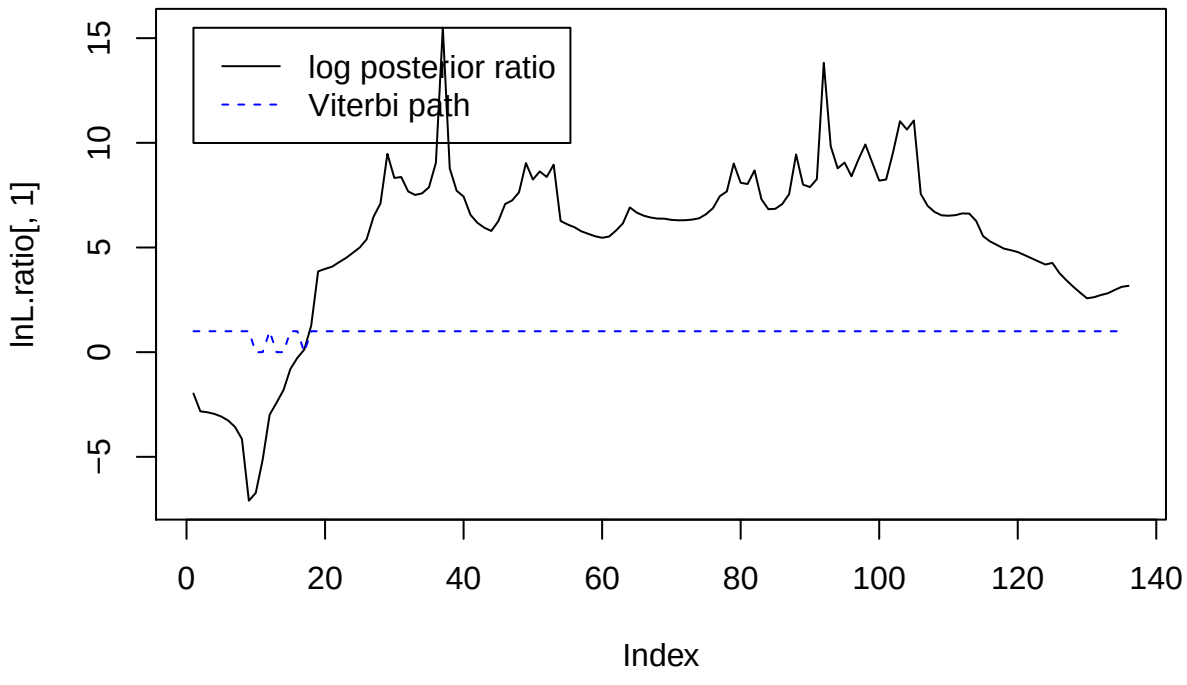

```
##                        lnL   max lnL tract length    Pr(S_0)   Pr(S_1)
## YBR191W_YPL079W -1467.294 -1465.684      21.2799 0.01817025 0.9818297
```



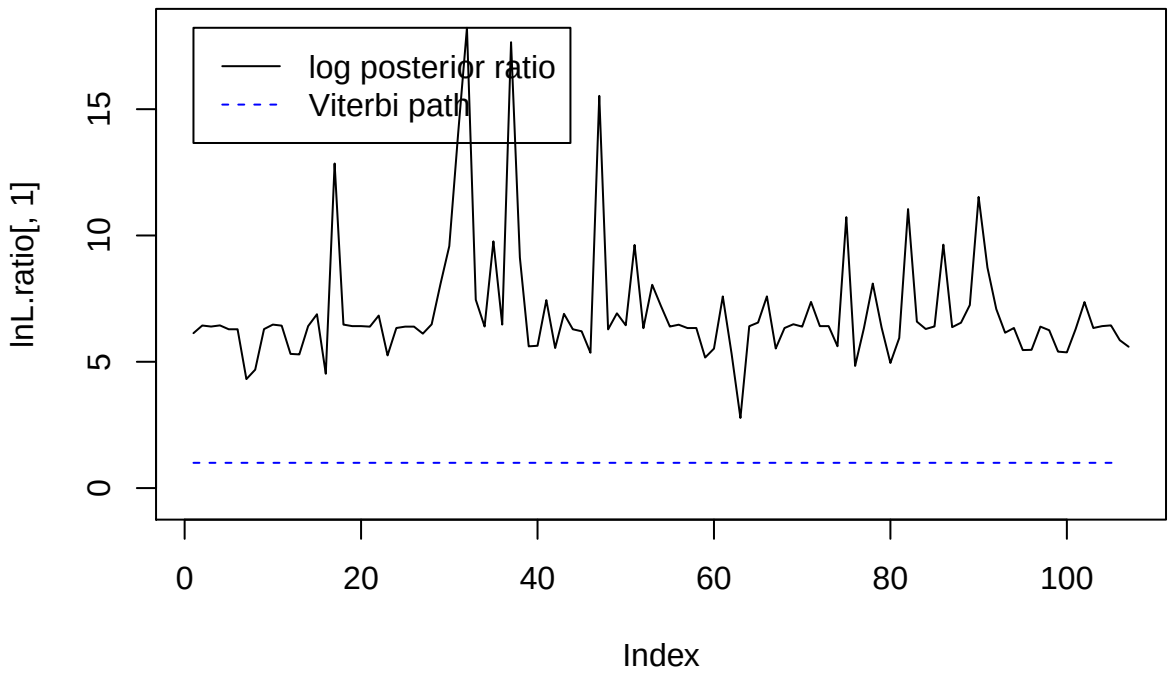

```
##                        lnL   max lnL tract length      Pr(S_0)   Pr(S_1)
## YER074W_YIL069C -1251.963 -1251.963     3.000205 0.0002647946 0.9997352
```



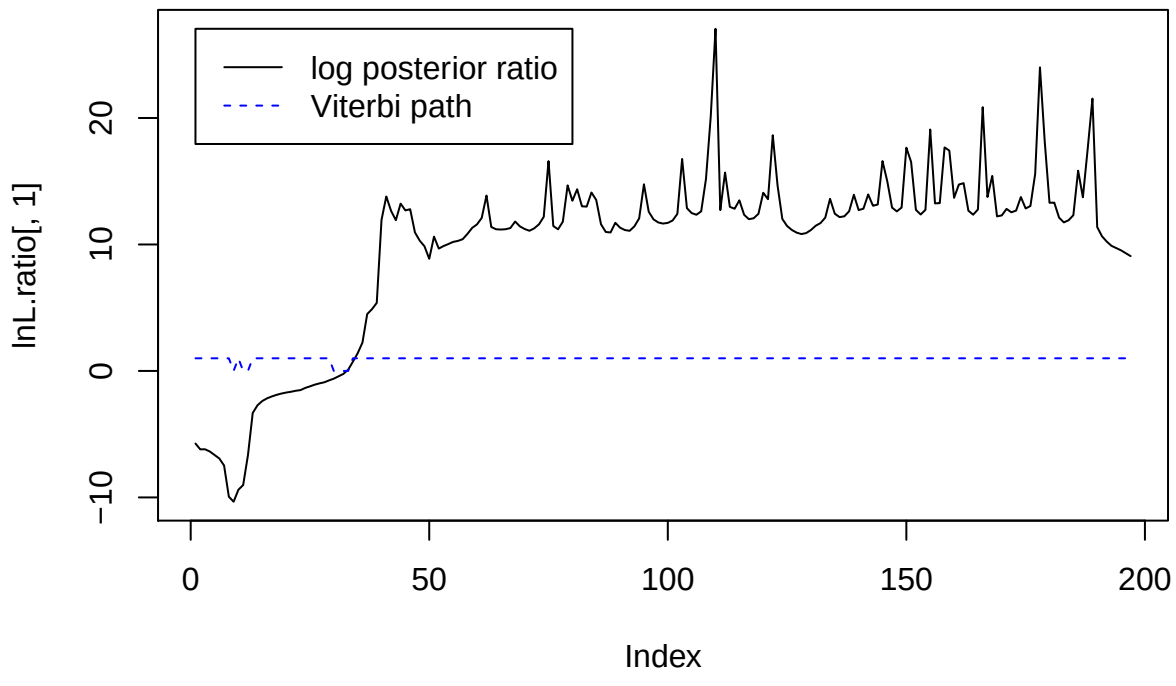

```
##                        lnL   max lnL tract length   Pr(S_0)   Pr(S_1)
## YDR418W_YEL054C -1739.176 -1735.418     129.3511 0.1269732 0.8730268
```



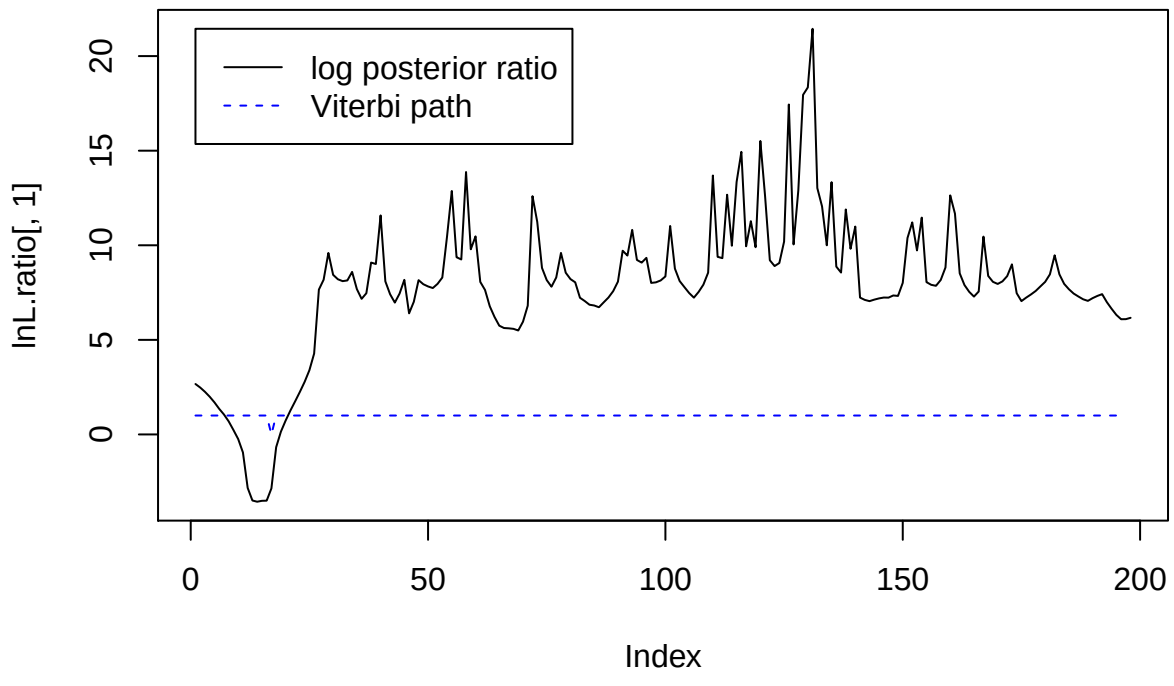

```
##                        lnL   max lnL tract length    Pr(S_0)  Pr(S_1)
## YBL087C_YER117W -1367.679 -1361.969      156.351 0.02308803 0.976912
```




```
##                        lnL   max lnL tract length     Pr(S_0)   Pr(S_1)
## YLR333C_YGR027C -1261.999 -1261.999     3.003481 0.002249659 0.9977503
```




```
##                         lnL   max lnL tract length      Pr(S_0)   Pr(S_1)
## YMR142C_YDL082W -2054.051 -2043.742     595.5792 0.0009455638 0.9990544
```




```
##                        lnL   max lnL tract length     Pr(S_0)   Pr(S_1)
## YER102W_YBL072C -2058.956 -2055.381     107.2651 0.001988219 0.9980118
```