

# FindaGeneProject\_HeatMap

```
library(bio3d)
```

```
alignment <- read.fasta("FindaGene_Alignment.fasta")
head(alignment)
```

```
## $id
## [1] "Pig"
## [3] "Human"
## [5] "Chinese_Hamster"
## [7] "Mouse"
##
## $ali
##
## [1] [,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10]
## Pig "M" "R" "A" "A" "G" "Q" "L" "L" "R" "A"
## Chick "-" "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Human "-" "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Black_snub_nosed_monkey "-" "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Chinese_Hamster "-" "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Rat "-" "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Mouse "-" "-" "-" "-" "-" "-" "-" "-" "-" "-"
##
## [1,11] [1,12] [1,13] [1,14] [1,15] [1,16] [1,17] [1,18] [1,19]
## Pig "C" "S" "Q" "T" "W" "K" "S" "V" "R"
## Chick "M" "A" "Y" "T" "W" "R" "-" "-" "-"
## Human "M" "K" "W" "V" "W" "-" "-" "-" "-"
## Black_snub_nosed_monkey "M" "K" "W" "M" "W" "-" "-" "-" "-"
## Chinese_Hamster "M" "E" "W" "V" "W" "-" "-" "-" "-"
## Rat "M" "E" "W" "V" "W" "-" "-" "-" "-"
## Mouse "M" "E" "W" "V" "W" "-" "-" "-" "-"
##
## [1,20] [1,21] [1,22] [1,23] [1,24] [1,25] [1,26] [1,27] [1,28]
## Pig "M" "A" "S" "T" "G" "V" "E" "R" "R"
## Chick "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Human "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Black_snub_nosed_monkey "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Chinese_Hamster "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Rat "-" "-" "-" "-" "-" "-" "-" "-" "-"
## Mouse "-" "-" "-" "-" "-" "-" "-" "-" "-"
##
## [1,29] [1,30] [1,31] [1,32] [1,33] [1,34] [1,35] [1,36] [1,37]
## Pig "K" "P" "L" "E" "N" "K" "V" "A" "L"
## Chick "-" "-" "-" "-" "-" "-" "-" "A" "L"
## Human "-" "-" "-" "-" "-" "-" "-" "A" "L"
## Black_snub_nosed_monkey "-" "-" "-" "-" "-" "-" "-" "A" "L"
## Chinese_Hamster "-" "-" "-" "-" "-" "-" "-" "A" "L"
## Rat "-" "-" "-" "-" "-" "-" "-" "A" "L"
## Mouse "-" "-" "-" "-" "-" "-" "-" "A" "L"
##
## [1,38] [1,39] [1,40] [1,41] [1,42] [1,43] [1,44] [1,45] [1,46]
```

## Pig	"V"	"T"	"A"	"S"	"T"	"D"	"G"	"I"	"G"
## Chick	"L"	"L"	"L"	"A"	"L"	"A"	"F"	"L"	"G"
## Human	"L"	"L"	"L"	"A"	"A"	"_"	"_"	"L"	"G"
## Black_snub_nosed_monkey	"L"	"L"	"L"	"A"	"A"	"_"	"_"	"L"	"G"
## Chinese_Hamster	"V"	"L"	"L"	"A"	"V"	"_"	"_"	"L"	"G"
## Rat	"V"	"L"	"L"	"A"	"A"	"_"	"_"	"L"	"G"
## Mouse	"V"	"L"	"L"	"A"	"A"	"_"	"_"	"L"	"G"
##	[,47]	[,48]	[,49]	[,50]	[,51]	[,52]	[,53]	[,54]	[,55]
## Pig	"L"	"A"	"I"	"A"	"R"	"R"	"L"	"A"	"Q"
## Chick	"S"	"S"	"M"	"A"	"E"	"R"	"D"	"C"	"R"
## Human	"S"	"G"	"R"	"A"	"E"	"R"	"D"	"C"	"R"
## Black_snub_nosed_monkey	"S"	"G"	"R"	"A"	"E"	"R"	"D"	"C"	"R"
## Chinese_Hamster	"G"	"S"	"S"	"A"	"E"	"R"	"D"	"C"	"R"
## Rat	"G"	"G"	"S"	"A"	"E"	"R"	"D"	"C"	"R"
## Mouse	"G"	"G"	"S"	"A"	"E"	"R"	"D"	"C"	"R"
##	[,56]	[,57]	[,58]	[,59]	[,60]	[,61]	[,62]	[,63]	[,64]
## Pig	"D"	"G"	"A"	"H"	"V"	"V"	"V"	"S"	"S"
## Chick	"_"	"_"	"_"	"_"	"_"	"V"	"S"	"S"	"F"
## Human	"_"	"_"	"_"	"_"	"_"	"V"	"S"	"S"	"F"
## Black_snub_nosed_monkey	"_"	"_"	"_"	"_"	"_"	"V"	"S"	"S"	"F"
## Chinese_Hamster	"_"	"_"	"_"	"_"	"_"	"V"	"S"	"S"	"F"
## Rat	"_"	"_"	"_"	"_"	"_"	"V"	"S"	"S"	"F"
## Mouse	"_"	"_"	"_"	"_"	"_"	"V"	"S"	"S"	"F"
##	[,65]	[,66]	[,67]	[,68]	[,69]	[,70]	[,71]	[,72]	[,73]
## Pig	"R"	"K"	"Q"	"E"	"N"	"V"	"D"	"R"	"_"
## Chick	"K"	"V"	"K"	"E"	"N"	"F"	"D"	"K"	"N"
## Human	"R"	"V"	"K"	"E"	"N"	"F"	"D"	"K"	"A"
## Black_snub_nosed_monkey	"R"	"V"	"K"	"E"	"N"	"F"	"D"	"K"	"A"
## Chinese_Hamster	"R"	"V"	"K"	"E"	"N"	"F"	"D"	"K"	"A"
## Rat	"R"	"V"	"K"	"E"	"N"	"F"	"D"	"K"	"A"
## Mouse	"R"	"V"	"K"	"E"	"N"	"F"	"D"	"K"	"A"
##	[,74]	[,75]	[,76]	[,77]	[,78]	[,79]	[,80]	[,81]	[,82]
## Pig	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"T"	"V"
## Chick	"R"	"Y"	"S"	"G"	"T"	"W"	"Y"	"A"	"M"
## Human	"R"	"F"	"S"	"G"	"T"	"W"	"Y"	"A"	"M"
## Black_snub_nosed_monkey	"R"	"F"	"S"	"G"	"T"	"W"	"Y"	"A"	"M"
## Chinese_Hamster	"R"	"F"	"S"	"G"	"I"	"W"	"Y"	"A"	"I"
## Rat	"R"	"F"	"S"	"G"	"L"	"W"	"Y"	"A"	"I"
## Mouse	"R"	"F"	"S"	"G"	"L"	"W"	"Y"	"A"	"I"
##	[,83]	[,84]	[,85]	[,86]	[,87]	[,88]	[,89]	[,90]	[,91]
## Pig	"A"	"T"	"L"	"Q"	"G"	"E"	"G"	"L"	"S"
## Chick	"A"	"K"	"K"	"D"	"P"	"E"	"G"	"L"	"F"
## Human	"A"	"K"	"K"	"D"	"P"	"E"	"G"	"L"	"F"
## Black_snub_nosed_monkey	"A"	"K"	"K"	"D"	"P"	"E"	"G"	"L"	"F"
## Chinese_Hamster	"A"	"K"	"K"	"D"	"P"	"E"	"G"	"L"	"F"
## Rat	"A"	"K"	"K"	"D"	"P"	"E"	"G"	"L"	"F"
## Mouse	"A"	"K"	"K"	"D"	"P"	"E"	"G"	"L"	"F"
##	[,92]	[,93]	[,94]	[,95]	[,96]	[,97]	[,98]	[,99]	[,100]
## Pig	"V"	"T"	"G"	"T"	"V"	"C"	"H"	"V"	"G"
## Chick	"L"	"Q"	"D"	"N"	"V"	"V"	"A"	"Q"	"F"
## Human	"L"	"Q"	"D"	"N"	"I"	"V"	"A"	"E"	"F"
## Black_snub_nosed_monkey	"L"	"Q"	"D"	"N"	"I"	"V"	"A"	"E"	"F"
## Chinese_Hamster	"L"	"Q"	"D"	"N"	"I"	"I"	"A"	"E"	"F"
## Rat	"L"	"Q"	"D"	"N"	"I"	"I"	"A"	"E"	"F"

## Mouse	"L"	"Q"	"D"	"N"	"I"	"I"	"A"	"E"	"F"
##	[,101]	[,102]	[,103]	[,104]	[,105]	[,106]	[,107]	[,108]	
## Pig	"K"	"A"	"E"	"D"	"R"	"E"	"R"	"L"	
## Chick	"T"	"V"	"D"	"E"	"N"	"G"	"Q"	"M"	
## Human	"S"	"V"	"D"	"E"	"T"	"G"	"Q"	"M"	
## Black_snub_nosed_monkey	"S"	"V"	"D"	"E"	"T"	"G"	"Q"	"M"	
## Chinese_Hamster	"S"	"V"	"D"	"E"	"K"	"G"	"H"	"M"	
## Rat	"S"	"V"	"D"	"E"	"K"	"G"	"H"	"M"	
## Mouse	"S"	"V"	"D"	"E"	"K"	"G"	"H"	"M"	
##	[,109]	[,110]	[,111]	[,112]	[,113]	[,114]	[,115]	[,116]	
## Pig	"V"	"A"	"M"	"A"	"V"	"N"	"L"	"H"	
## Chick	"S"	"A"	"T"	"A"	"_"	"_"	"_"	"K"	
## Human	"S"	"A"	"T"	"A"	"_"	"_"	"_"	"K"	
## Black_snub_nosed_monkey	"S"	"A"	"T"	"A"	"_"	"_"	"_"	"K"	
## Chinese_Hamster	"S"	"A"	"T"	"A"	"_"	"_"	"_"	"K"	
## Rat	"S"	"A"	"T"	"A"	"_"	"_"	"_"	"K"	
## Mouse	"S"	"A"	"T"	"A"	"_"	"_"	"_"	"K"	
##	[,117]	[,118]	[,119]	[,120]	[,121]	[,122]	[,123]	[,124]	
## Pig	"G"	"G"	"V"	"D"	"I"	"L"	"V"	"S"	
## Chick	"G"	"R"	"V"	"R"	"L"	"F"	"N"	"N"	
## Human	"G"	"R"	"V"	"R"	"L"	"L"	"N"	"N"	
## Black_snub_nosed_monkey	"G"	"R"	"V"	"R"	"L"	"L"	"N"	"N"	
## Chinese_Hamster	"G"	"R"	"V"	"R"	"I"	"L"	"S"	"N"	
## Rat	"G"	"R"	"V"	"R"	"L"	"L"	"S"	"N"	
## Mouse	"G"	"R"	"V"	"R"	"L"	"L"	"S"	"N"	
##	[,125]	[,126]	[,127]	[,128]	[,129]	[,130]	[,131]	[,132]	
## Pig	"N"	"A"	"A"	"V"	"N"	"P"	"F"	"F"	
## Chick	"W"	"D"	"V"	"C"	"A"	"D"	"M"	"I"	
## Human	"W"	"D"	"V"	"C"	"A"	"D"	"M"	"V"	
## Black_snub_nosed_monkey	"W"	"D"	"V"	"C"	"A"	"D"	"M"	"V"	
## Chinese_Hamster	"W"	"E"	"V"	"C"	"A"	"D"	"M"	"V"	
## Rat	"W"	"E"	"V"	"C"	"A"	"D"	"M"	"V"	
## Mouse	"W"	"E"	"V"	"C"	"A"	"D"	"M"	"V"	
##	[,133]	[,134]	[,135]	[,136]	[,137]	[,138]	[,139]	[,140]	
## Pig	"G"	"N"	"I"	"I"	"D"	"A"	"T"	"E"	
## Chick	"G"	"S"	"F"	"T"	"D"	"T"	"E"	"D"	
## Human	"G"	"T"	"F"	"T"	"D"	"T"	"E"	"D"	
## Black_snub_nosed_monkey	"G"	"T"	"F"	"T"	"D"	"T"	"E"	"D"	
## Chinese_Hamster	"G"	"T"	"F"	"T"	"D"	"T"	"E"	"D"	
## Rat	"G"	"T"	"F"	"T"	"D"	"T"	"E"	"D"	
## Mouse	"G"	"T"	"F"	"T"	"D"	"T"	"E"	"D"	
##	[,141]	[,142]	[,143]	[,144]	[,145]	[,146]	[,147]	[,148]	
## Pig	"E"	"V"	"W"	"D"	"K"	"I"	"L"	"H"	
## Chick	"P"	"A"	"K"	"F"	"K"	"M"	"K"	"Y"	
## Human	"P"	"A"	"K"	"F"	"K"	"M"	"K"	"Y"	
## Black_snub_nosed_monkey	"P"	"A"	"K"	"F"	"K"	"M"	"K"	"Y"	
## Chinese_Hamster	"P"	"A"	"K"	"F"	"K"	"M"	"K"	"Y"	
## Rat	"P"	"A"	"K"	"F"	"K"	"M"	"K"	"Y"	
## Mouse	"P"	"A"	"K"	"F"	"K"	"M"	"K"	"Y"	
##	[,149]	[,150]	[,151]	[,152]	[,153]	[,154]	[,155]	[,156]	
## Pig	"V"	"N"	"V"	"K"	"A"	"T"	"V"	"L"	
## Chick	"W"	"G"	"V"	"A"	"S"	"F"	"L"	"_"	
## Human	"W"	"G"	"V"	"A"	"S"	"F"	"L"	"_"	
## Black_snub_nosed_monkey	"W"	"G"	"V"	"A"	"S"	"F"	"L"	"_"	

## Chinese_Hamster	"W"	"G"	"V"	"A"	"S"	"F"	"L"	"_"
## Rat	"W"	"G"	"V"	"A"	"S"	"F"	"L"	"_"
## Mouse	"W"	"G"	"V"	"A"	"S"	"F"	"L"	"_"
##	[,157]	[,158]	[,159]	[,160]	[,161]	[,162]	[,163]	[,164]
## Pig	"M"	"T"	"K"	"A"	"V"	"V"	"P"	"E"
## Chick	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Human	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Black_snub_nosed_monkey	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Chinese_Hamster	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Rat	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Mouse	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
##	[,165]	[,166]	[,167]	[,168]	[,169]	[,170]	[,171]	[,172]
## Pig	"M"	"E"	"K"	"R"	"G"	"G"	"G"	"S"
## Chick	"_"	"_"	"Q"	"K"	"G"	"N"	"D"	"D"
## Human	"_"	"_"	"Q"	"K"	"G"	"N"	"D"	"D"
## Black_snub_nosed_monkey	"_"	"_"	"Q"	"K"	"G"	"N"	"D"	"D"
## Chinese_Hamster	"_"	"_"	"Q"	"R"	"G"	"N"	"D"	"D"
## Rat	"_"	"_"	"Q"	"R"	"G"	"N"	"D"	"D"
## Mouse	"_"	"_"	"Q"	"R"	"G"	"N"	"D"	"D"
##	[,173]	[,174]	[,175]	[,176]	[,177]	[,178]	[,179]	[,180]
## Pig	"V"	"L"	"I"	"V"	"S"	"S"	"V"	"G"
## Chick	"H"	"W"	"V"	"V"	"D"	"T"	"_"	"_"
## Human	"H"	"W"	"I"	"V"	"D"	"T"	"_"	"_"
## Black_snub_nosed_monkey	"H"	"W"	"I"	"I"	"D"	"T"	"_"	"_"
## Chinese_Hamster	"H"	"W"	"I"	"I"	"D"	"T"	"_"	"_"
## Rat	"H"	"W"	"I"	"I"	"D"	"T"	"_"	"_"
## Mouse	"H"	"W"	"I"	"I"	"D"	"T"	"_"	"_"
##	[,181]	[,182]	[,183]	[,184]	[,185]	[,186]	[,187]	[,188]
## Pig	"A"	"Y"	"H"	"P"	"F"	"P"	"N"	"L"
## Chick	"D"	"Y"	"D"	"T"	"Y"	"_"	"_"	"_"
## Human	"D"	"Y"	"D"	"T"	"Y"	"_"	"_"	"_"
## Black_snub_nosed_monkey	"D"	"Y"	"D"	"T"	"Y"	"_"	"_"	"_"
## Chinese_Hamster	"D"	"Y"	"D"	"T"	"F"	"_"	"_"	"_"
## Rat	"D"	"Y"	"D"	"T"	"F"	"_"	"_"	"_"
## Mouse	"D"	"Y"	"D"	"T"	"F"	"_"	"_"	"_"
##	[,189]	[,190]	[,191]	[,192]	[,193]	[,194]	[,195]	[,196]
## Pig	"G"	"P"	"Y"	"N"	"V"	"S"	"K"	"T"
## Chick	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Human	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Black_snub_nosed_monkey	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Chinese_Hamster	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Rat	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Mouse	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
##	[,197]	[,198]	[,199]	[,200]	[,201]	[,202]	[,203]	[,204]
## Pig	"A"	"L"	"L"	"G"	"L"	"T"	"K"	"N"
## Chick	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Human	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Black_snub_nosed_monkey	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Chinese_Hamster	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Rat	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
## Mouse	"_"	"_"	"_"	"_"	"_"	"_"	"_"	"_"
##	[,205]	[,206]	[,207]	[,208]	[,209]	[,210]	[,211]	[,212]
## Pig	"L"	"A"	"V"	"E"	"L"	"A"	"P"	"R"
## Chick	"_"	"A"	"L"	"H"	"Y"	"S"	"C"	"R"

## Human	"_"	"A"	"V"	"Q"	"Y"	"S"	"C"	"R"
## Black_snub_nosed_monkey	"_"	"A"	"V"	"Q"	"Y"	"S"	"C"	"R"
## Chinese_Hamster	"_"	"A"	"L"	"Q"	"Y"	"S"	"C"	"R"
## Rat	"_"	"A"	"L"	"Q"	"Y"	"S"	"C"	"R"
## Mouse	"_"	"A"	"L"	"Q"	"Y"	"S"	"C"	"R"
##	[,213]	[,214]	[,215]	[,216]	[,217]	[,218]	[,219]	[,220]
## Pig	"N"	"I"	"R"	"V"	"N"	"C"	"L"	"A"
## Chick	"E"	"L"	"N"	"E"	"D"	"_"	"_"	"_"
## Human	"L"	"L"	"N"	"L"	"D"	"_"	"_"	"_"
## Black_snub_nosed_monkey	"L"	"L"	"N"	"L"	"D"	"_"	"_"	"_"
## Chinese_Hamster	"L"	"Q"	"N"	"L"	"D"	"_"	"_"	"_"
## Rat	"L"	"Q"	"N"	"L"	"D"	"_"	"_"	"_"
## Mouse	"L"	"Q"	"N"	"L"	"D"	"_"	"_"	"_"
##	[,221]	[,222]	[,223]	[,224]	[,225]	[,226]	[,227]	[,228]
## Pig	"P"	"G"	"L"	"I"	"K"	"T"	"N"	"F"
## Chick	"_"	"G"	"T"	"C"	"A"	"D"	"S"	"Y"
## Human	"_"	"G"	"T"	"C"	"A"	"D"	"S"	"Y"
## Black_snub_nosed_monkey	"_"	"G"	"T"	"C"	"A"	"D"	"S"	"Y"
## Chinese_Hamster	"_"	"G"	"T"	"C"	"A"	"D"	"S"	"Y"
## Rat	"_"	"G"	"T"	"C"	"A"	"D"	"S"	"Y"
## Mouse	"_"	"G"	"T"	"C"	"A"	"D"	"S"	"Y"
##	[,229]	[,230]	[,231]	[,232]	[,233]	[,234]	[,235]	[,236]
## Pig	"S"	"Q"	"V"	"L"	"W"	"M"	"D"	"K"
## Chick	"S"	"F"	"V"	"F"	"_"	"_"	"S"	"R"
## Human	"S"	"F"	"V"	"F"	"_"	"_"	"S"	"R"
## Black_snub_nosed_monkey	"S"	"F"	"V"	"F"	"_"	"_"	"S"	"R"
## Chinese_Hamster	"S"	"F"	"V"	"F"	"_"	"_"	"S"	"R"
## Rat	"S"	"F"	"V"	"F"	"_"	"_"	"S"	"R"
## Mouse	"S"	"F"	"V"	"F"	"_"	"_"	"S"	"R"
##	[,237]	[,238]	[,239]	[,240]	[,241]	[,242]	[,243]	[,244]
## Pig	"A"	"R"	"K"	"E"	"Y"	"M"	"K"	"E"
## Chick	"D"	"P"	"K"	"G"	"L"	"P"	"P"	"E"
## Human	"D"	"P"	"N"	"G"	"L"	"P"	"P"	"E"
## Black_snub_nosed_monkey	"D"	"P"	"N"	"G"	"L"	"P"	"P"	"E"
## Chinese_Hamster	"D"	"P"	"N"	"G"	"L"	"T"	"P"	"E"
## Rat	"D"	"P"	"N"	"G"	"L"	"T"	"P"	"E"
## Mouse	"D"	"P"	"N"	"G"	"L"	"S"	"P"	"E"
##	[,245]	[,246]	[,247]	[,248]	[,249]	[,250]	[,251]	[,252]
## Pig	"S"	"L"	"R"	"I"	"R"	"R"	"L"	"G"
## Chick	"A"	"Q"	"K"	"I"	"V"	"R"	"Q"	"R"
## Human	"A"	"Q"	"K"	"I"	"V"	"R"	"Q"	"R"
## Black_snub_nosed_monkey	"A"	"Q"	"K"	"I"	"V"	"R"	"Q"	"R"
## Chinese_Hamster	"T"	"R"	"R"	"L"	"V"	"R"	"Q"	"R"
## Rat	"T"	"R"	"R"	"L"	"V"	"R"	"Q"	"R"
## Mouse	"T"	"R"	"R"	"L"	"V"	"R"	"Q"	"R"
##	[,253]	[,254]	[,255]	[,256]	[,257]	[,258]	[,259]	[,260]
## Pig	"N"	"P"	"E"	"D"	"C"	"A"	"G"	"I"
## Chick	"Q"	"I"	"D"	"L"	"C"	"L"	"_"	"_"
## Human	"Q"	"E"	"E"	"L"	"C"	"L"	"_"	"_"
## Black_snub_nosed_monkey	"Q"	"E"	"E"	"L"	"C"	"L"	"_"	"_"
## Chinese_Hamster	"Q"	"E"	"E"	"L"	"C"	"L"	"_"	"_"
## Rat	"Q"	"E"	"E"	"L"	"C"	"L"	"_"	"_"
## Mouse	"Q"	"E"	"E"	"L"	"C"	"L"	"_"	"_"
##	[,261]	[,262]	[,263]	[,264]	[,265]	[,266]	[,267]	[,268]

```

## Pig          "V"      "S"      "F"      "L"      "C"      "S"      "E"      "D"
## Chick        "_"      "_"      "_"      "_"      "_"      "D"      "R"      "K"
## Human        "_"      "_"      "_"      "_"      "_"      "A"      "R"      "Q"
## Black_snub_nosed_monkey "_"      "_"      "_"      "_"      "_"      "A"      "R"      "Q"
## Chinese_Hamster "_"      "_"      "_"      "_"      "_"      "E"      "R"      "Q"
## Rat          "_"      "_"      "_"      "_"      "_"      "E"      "R"      "Q"
## Mouse        "_"      "_"      "_"      "_"      "_"      "E"      "R"      "Q"
##              [,269] [,270] [,271] [,272] [,273] [,274] [,275] [,276]
## Pig          "A"      "S"      "Y"      "I"      "T"      "G"      "E"      "T"
## Chick        "Y"      "R"      "V"      "I"      "V"      "H"      "N"      "G"
## Human        "Y"      "R"      "L"      "I"      "V"      "H"      "N"      "G"
## Black_snub_nosed_monkey "Y"      "R"      "L"      "I"      "V"      "H"      "N"      "G"
## Chinese_Hamster "Y"      "R"      "W"      "I"      "E"      "H"      "N"      "G"
## Rat          "Y"      "R"      "W"      "I"      "E"      "H"      "N"      "G"
## Mouse        "Y"      "R"      "W"      "I"      "E"      "H"      "N"      "G"
##              [,277] [,278] [,279] [,280] [,281] [,282] [,283] [,284]
## Pig          "V"      "V"      "V"      "G"      "G"      "G"      "T"      "A"
## Chick        "F"      "C"      "S"      "_"      "_"      "_"      "_"      "_"
## Human        "Y"      "C"      "D"      "G"      "R"      "S"      "E"      "R"
## Black_snub_nosed_monkey "Y"      "C"      "D"      "G"      "R"      "S"      "E"      "R"
## Chinese_Hamster "Y"      "C"      "Q"      "S"      "R"      "P"      "S"      "R"
## Rat          "Y"      "C"      "Q"      "S"      "R"      "P"      "L"      "R"
## Mouse        "Y"      "C"      "Q"      "S"      "R"      "P"      "S"      "R"
##              [,285] [,286] [,287]
## Pig          "S"      "R"      "L"
## Chick        "_"      "_"      "_"
## Human        "N"      "L"      "L"
## Black_snub_nosed_monkey "N"      "L"      "L"
## Chinese_Hamster "N"      "S"      "L"
## Rat          "N"      "S"      "L"
## Mouse        "N"      "S"      "L"
##
## $call
## read.fasta(file = "FindaGene_Alignment.fasta")

```

```
seqID <- seqidentity(alignment, normalize=TRUE, similarity=FALSE, ncore=1, nseg.scale=1)
```

```
heatmap(seqID, cexRow = 0.7, cexCol = 0.7, margins=c(8,3))
```

