

Volcano Graph produced by R program

#Excel file format:

Gene	FoldChange	-Log10P
FLNB	33.33	30.08
AKA12	20.00	16.58
MOT4	14.29	21.3
HNRPK	14.29	8.67

#save Excel file to text file by choosing "Text (Tab delimited) (*.txt)"

#The text file will look like after being opened by WordPad:

```
Gene FoldChange -Log10P
FLNB 33.33 30.08
AKA12 20.00 16.58
MOT4 14.29 21.3
HNRPK 14.29 8.67
```

#In R Console, type in following commands marked by **blue** color;
#At first, open the data file that must be exactly the same format as shown above. File name and the header in the data file can be different if you want to change. However, the text in the commands must be corresponding to the name and header used in the data file.

```
>data <- read.table("L:/data.txt", header=TRUE)
```

```
>list(data)
```

#Display:

```
[[1]]
```

```
Gene FoldChange X.Log10P
1 FLNB 33.33 30.08
2 AKA12 20.00 16.58
3 MOT4 14.29 21.30
4 HNRPK 14.29 8.67
5 GNAS2 12.50 40.15
```

.....

the negative sign is changed into "X." (We will either fix it by R program or correct it by other graphic software)

```
> with(data, plot(FoldChange, X.Log10P, pch=20, main="Volcano plot", xlim=c(-15,15)))
```

```
> with(subset(data, abs(FoldChange)>2), points(FoldChange, X.Log10P, pch=20, col="orange"))
```

```
> with(subset(data, X.Log10P>10 & FoldChange>2), points(FoldChange, X.Log10P, pch=20, col="red"))
```

```
> with(subset(data, X.Log10P>10 & FoldChange < -2), points(FoldChange, X.Log10P, pch=20, col="green"))
```

#The output image:

