

Excel Tutorial Part 5: Making Heat Maps

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Welcome!

This tutorial is brought to you by the Research Experiences in Microbiomes Network (or REMNet) and the City University of New York.

In this video you will explore features of the Conditional Formatting Tool in Microsoft Excel and learn how to make a heat map.

In order to follow along with us today, you have received taxa summary files produced by high throughput next generation sequencing and the qiime bioinformatics pipeline, and you have opened this file in Microsoft Excel. If you need a refresher on how to open these files in Excel, please review our tutorial called Accessing your Microbiome Data.

As you work with us today, you are welcome to use keystrokes or your mouse to utilize these commands and functions or to select necessary cells.

To orient you to this table, column A contains the hierarchy of taxonomy for each OTU identified in the project. Columns B through M report the relative abundance for each sample in this project. If you need a refresher on the formatting displayed here, please review our tutorial called Organizing your Microbiome Data.

Before we get started, we will save our tab-delimited .txt file as an Excel .xlsx file. Many of the tools and functions are not compatible with the tab-delimited file type.

#File > Save As... > Format: Excel Workbook (.xlsx) > click SAVE

First we will review the Conditional Formatting Tool. The top 10% most abundant OTUs are often identified in microbiome publications.

#Select sample columns

#Home > Conditional Formatting > Top/Bottom Rules > Top 10%

You can customize your format with several options.

#Click OK

We can also use the Conditional Formatting Tool to observe frequency trends in the relative abundances of your samples.

First we will remove the current conditional formatting

#Conditional Formatting > Clear Rules > Clear Rules from Entire sheet

Some standard heat map options are available in Excel

#Select sample columns

#Home > Conditional Formatting > Color Scales

Or you can customize your own heat map

#Select sample columns

#Home > Conditional Formatting > Color Scales > More Rules...

#Style: 3-color scale > Midpoint: (show menu) > Color: (select colors) > Click OK

You can also hide the numbers on your heat map while still retaining your color-scheme.

#Select your sample cells

#Format > Cells... > Custom > type or select ;;; > click OK.

To display your numbers again:

#Select your sample cells

#Format > Cells... > Custom > type or select General > click OK.

To summarize, you learned some of the key functions of the Conditional Formatting Tool including how to make heat maps from your relative abundance microbiome data.

Thank your for participating. If you found this helpful, we invite you to view our other tutorials guiding you through your microbiome data set.