## **Dot Plot**

The primary use of the dot plot is visualizing intensity values across samples.

We will invoke a dot plot from a gene list child spreadsheet with genes on rows.

- Right-click on the row header of the gene you want to visualize
  Select **Dot Plot** from the pop-up menu (Figure 1)

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	Dot Plot (Or	ig. Data)	chr21q22.3	8209 ///	C21orf33 ///	chromosome 21	NM_004649 ///	7.78656e-05	0.00482433	0.433046	7.78656e-05	1.47676	
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	Bar Chart (C	Jrig. Data)	chr21q22.11	10600	USP16	ubiquitin	NM_001001992	0.000115354	0.00102705	0.285254	0.000115354	1.59764	
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	Profile (Orig	. Data)	chr21q22.11	3460	IFNGR2	interferon	NM_005534 ///	0.000140321	0.000110691	0.0175371	0.000140321	1.34069	
	Probe Set D	etails	chr21q21.3	54148	MRPL39	mitochondrial	NM_017446 ///	0.000140577	0.0102415	0.499643	0.000140577	1.3735	
	Province to 1		chr21q22.2	51227	PIGP	phosphatidylino	NM_153681 ///	0.000188366	4.06409e-06	0.69133	0.000188366	1.69875	
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	19. 16331	216954_x_at	chr21g22.11	539	ATP50	ATP synthase,	NM_001697	0.000343061	0.0310582	0.814976	0.000343061	1.3383	
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Figure 6. Creating a dot plot of gene intensity values

A dot plot will be displayed in a new tab (Figure 2).



Figure 7. Simple dot plot of a single gene that shows the distribution of intensities across all samples

There are many customizations that can be made to this simple plot.

• Select **Configure Plot** ( from the plot command bar to launch the *Configure Plot* dialog (Figure 3).

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Figure 8. Configuring the data shown on the plot

The Configure Plot dialog lets you change how the data is displayed on the plot. We will make a change to illustrate the possibilities.

• Set Group by to 4. Tissue using the drop-down menu

This allows us to group the samples by any categorical attribute. These attributes are specified in the parent spreadsheet.

• Select **OK** to modify the plot

We could also have changed the grouping of samples using the Group by drop-down menu above the plot.

The order of the group columns is alphabetical by default, but can be changed to match the spreadsheet order by selecting **Categoricals in spreadsheet** order in the *Configure Plot* dialog (Figure 3).

• Select Plot Properties ( ) from the plot command bar to launch the *Plot Properties* dialog (Figure 4)

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Outline     Thin       Lighting Effects       Fogging       Transparency     0.00	Style direct   Line Width Image: pixels   Drawing Mode   Image: Normal Mixed
Save Load	OK Cancel

Figure 9. Changing the appearance of a dot plot using the plot properties dialog

The Plot Properties dialog lets you change the appearance of the plot. We will make a few changes to illustrate the possibilities.

- Set Shape to 3. Type using the drop-down menu
- Select the Box&Whiskers tab
- Set Box Width to 15 pixels
- Select the Titles tab
- Set X-Axis under Configure Axes Titles to Tissue
- Select **OK** to modify the plot

Alternately, we chould have changed the shapes using the *Shape by* drop-down menu above the plot. The dot plot now shows four columns with thinner box and whisker plots for each and different shapes for different sample types (Figure 5).



Figure 10. The Dot Plot can be modified to optimally visualize your data

Like many visualizations in Partek Genomics Suite, the dot plot is interactive.

• Select ( N) to activate Selection Mode

Legends can now be dragged and dropped to new locations on the plot. Samples can be selected by left-clicking the sample or left-clicking and dragging a box around samples.

• Select ( ) to activate Zoom Mode

Left clicking on a region will zoom in on it. The zoom level can be reset by selecting ( $^{\bigcirc}$ )

• After zooming in, select ( ) to activate Pan Mode

Left-click and drag to move around the plot.

- Select ( I ) to move between rows on the source spreadsheet
- Select (H/V) to swap the horizontal and vertical axes
- « Visualizations Profile Plot »

## Additional Assistance

If you need additional assistance, please visit our support page to submit a help ticket or find phone numbers for regional support.

