

## One Probe Analysis Tool

This is a simple spreadsheet that can be used with one probe at a time to assign fingerprints to signal intensities. It uses a fixed boundary version of the modified Bayes rules that are used in the **Fingerprint Assignment (Main Processing Tool**, or WholeProcess file), and does not modify the data that is entered. The rules in the latter file are more advanced and we recommend using them to assign fingerprints.

To use the **One Probe Analysis Tool**:

Calculate the means and variances for the signal intensities of clones that are expected to bind (Class 1) or not to bind (Class 0).

Inputs - Equal Variance sheet: Use this sheet to enter data if the variance of both sets of clones is identical. You will enter the means for each set of clones, the variance, and the prior probability of Class 1 (0.5) as well as upper and lower boundaries (we recommend 0.45 and 0.55, respectively).

Prior Probability of Class 1	p1	0.5
Lower Bound for Posterior Probability of Class 1	L0	0.45
Upper Bound for Posterior Probability of Class 1	L1	0.55

**Note:** We assume that the variance of the measurement within the two classes is the same. And Class 1 is taken to be the class with the largest mean value.

Mean of Class 0	Mu0	8
Mean of Class 1	Mu1	10
Variance	sig <sup>2</sup>	2

The data to analyze is entered in, and the output will be provided on, the “Analysis – Equal Variance” sheet.

Inputs – Unequal Variance sheet: Use this sheet to enter data if the variance of each set of clones is not equal. This is more likely to be the case. Data is entered in a manner similar to the above, only you will have to enter variance values for each set of clones. The data to analyze is entered in, and the output will be provided on, the “Analysis – Unequal Variance” sheet.

Analysis – Equal Variance and Analysis – Unequal Variance sheets:

You will enter data in the first and second columns, “Case” and “Y”. In the “Case” column (Column A) you can enter data identifiers such as clone names or numbers. In the “Y” column, you enter the data for the signal intensities. The signal intensities should have been generated in the same manner for the data you input into this page as the data that was input on the relevant “Inputs” page: that is, if you transform the data for your set of control clones, you must also transform the data you enter into the “Analysis” page.

The fingerprint assignment that is calculated based on the means and variances, and the boundary limits, entered earlier appears in column F, which should appear to be the third column on the "Analysis" pages.