Manual Counting of Bacterial Cells

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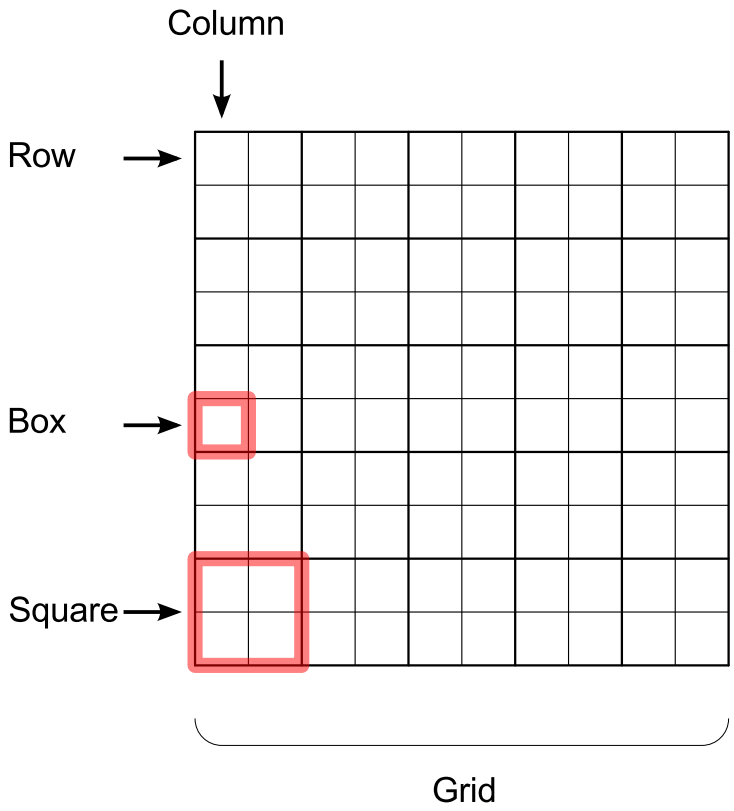
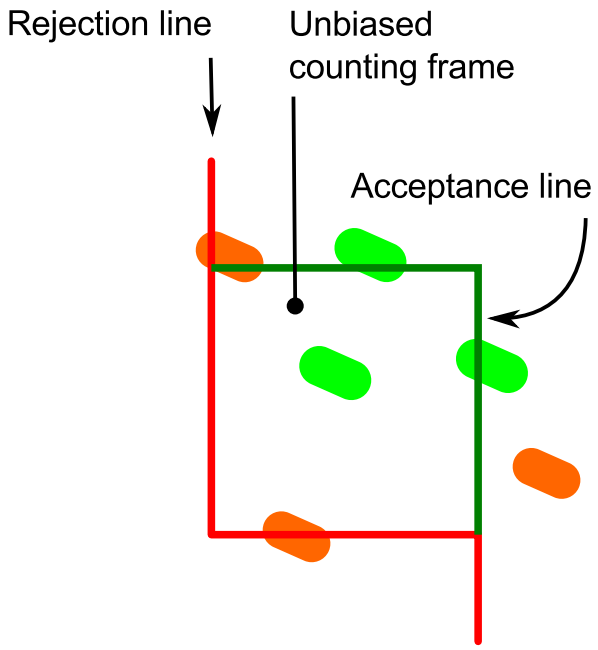
Using the occular grid and counting frame rules.





Counting rules: Only count objects that intersect the counting frame but do not touch the rejection line.

Calculation of Total Cell Numbers

aka. Abundance or Total Cell Counts (TCC)

A_{Grid}: Area of the Grid [mm^2] (Depends on Microscope, Objective, and Optovar)
A_{Filter}: Effective Filter Area [mm^2]
N: Number of Cells per Grid (Average from multiple Grids)
V: Filtered Volume (including Sample and Fixative) [ml]
$F_{Dilution}$: Dilution Factor = (Sample Volume + Fixative Volume) / Sample Volume

TCC: Total Cell Count (Cells per ml) [ml^{-1}]

$$TCC = \frac{N \bullet A_{Filter} \bullet F_{Dilution}}{A_{Grid} \bullet V}$$