

MetaXpress Custom Module Editor

Measure Background Intensity in Whole Images

Rev A 2018-08-22



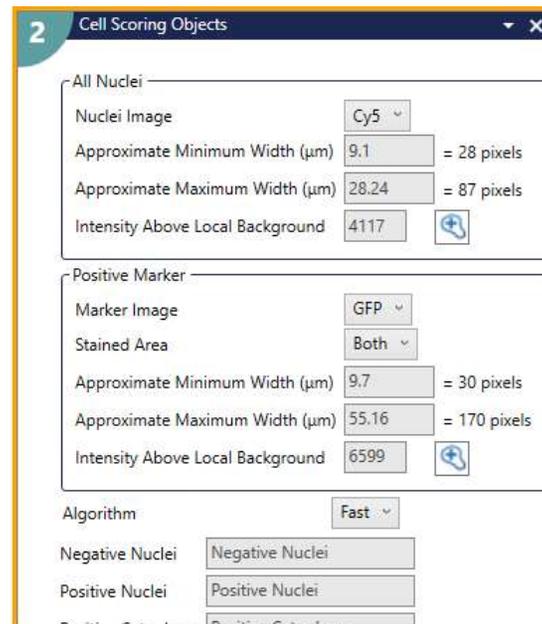
Chapter Purpose

- This guide explains a method to measure background intensity within the Custom Module Editor. This method will find the intensity of the background across the whole image.



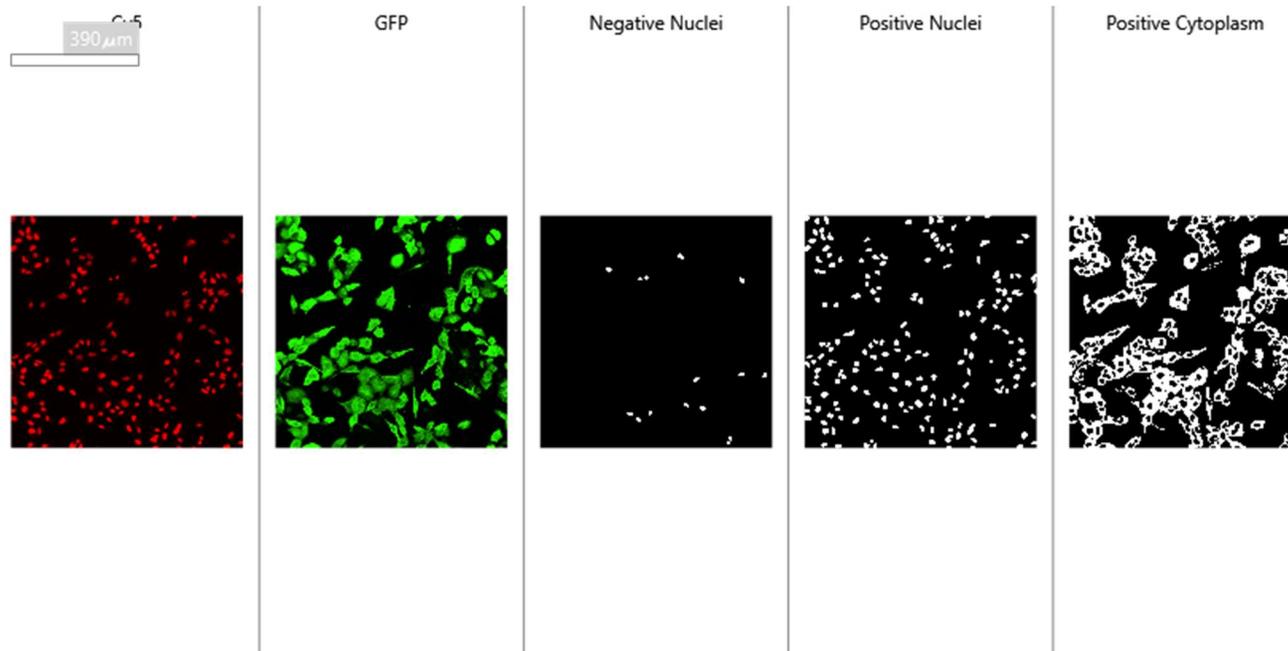
Step 1: Find Objects

- Use a suitable Find Objects or Application Module step to identify all objects. Cell Scoring, Simple Threshold, or Adaptive Threshold often works well.



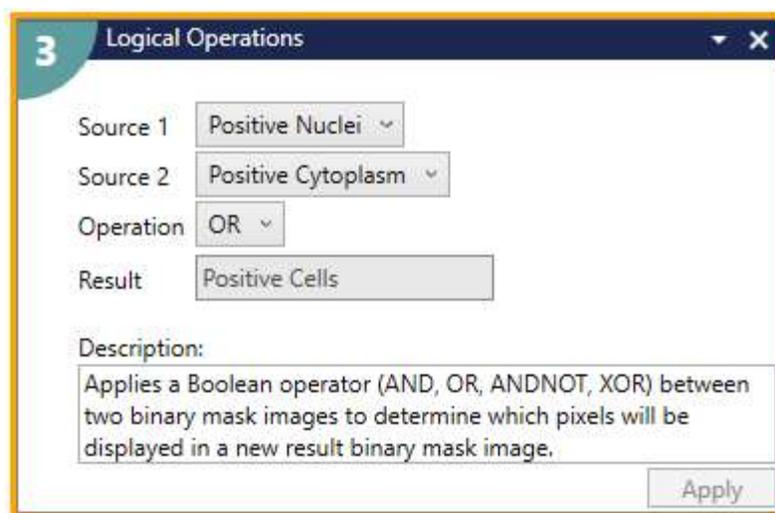
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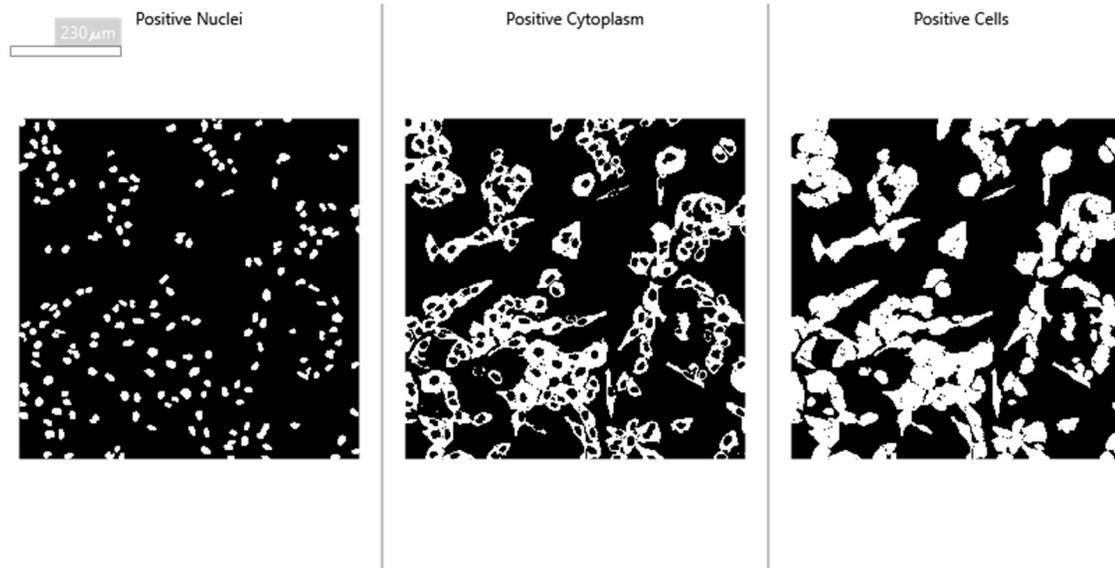
Step 2 (optional): Modify Objects > Logical Operations

- If you have multiple masks, use Logical OR steps to combine them into a single mask representing all objects.



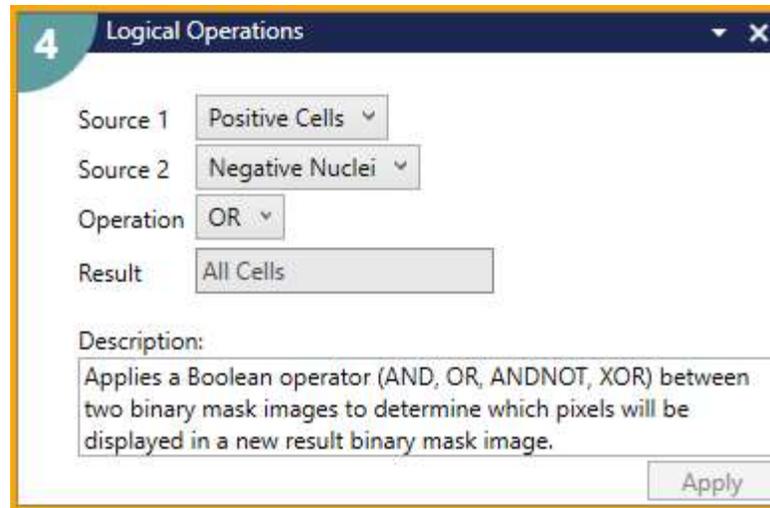
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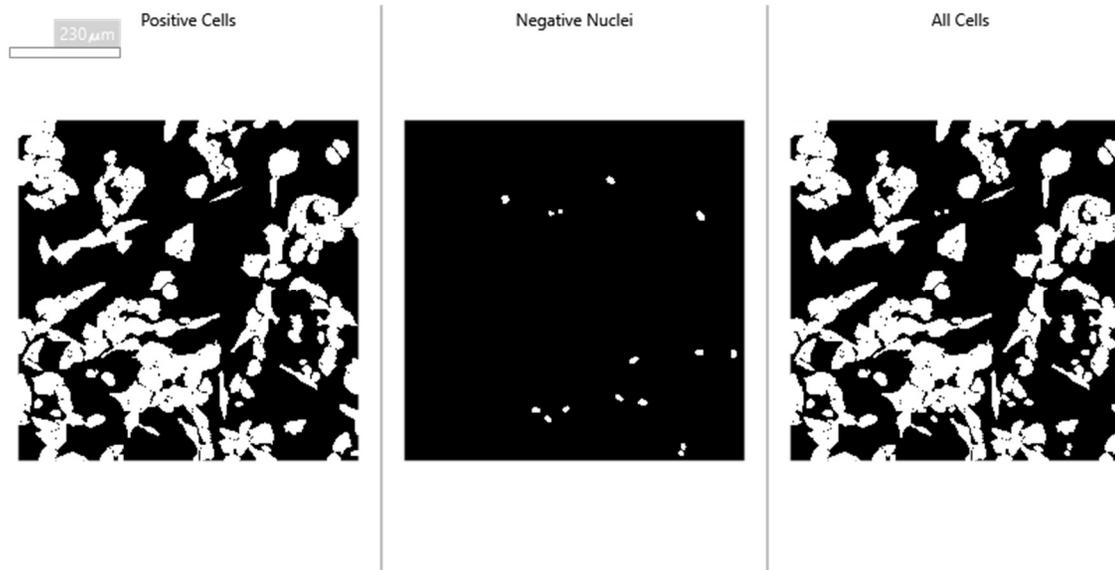
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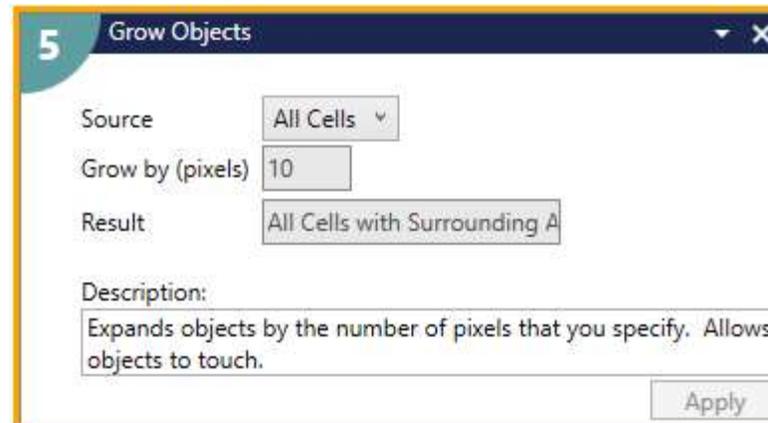
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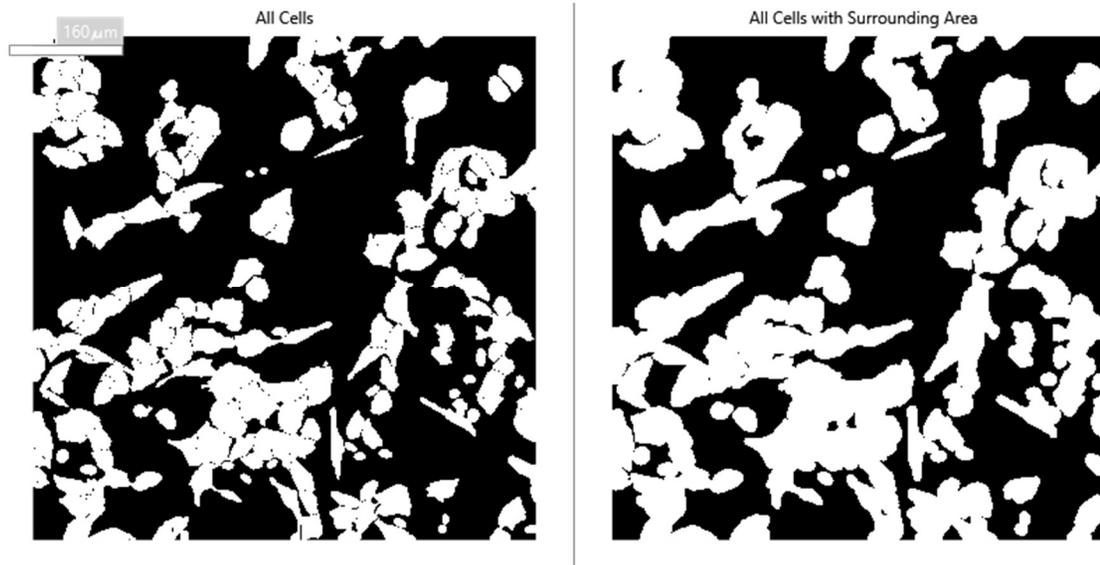
Step 3: Modify Objects > Grow Objects

- Grow the All objects mask by a few pixels to avoid measuring background at the edges of the objects.



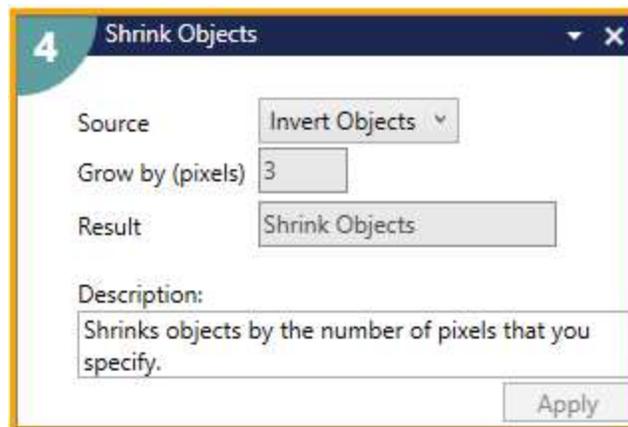
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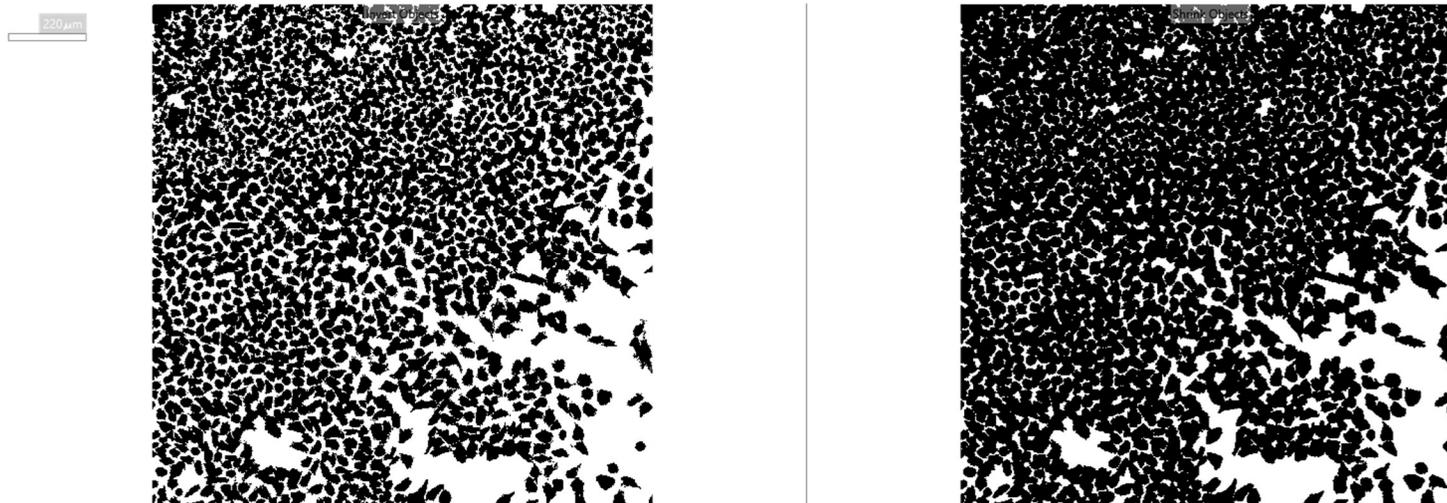
Step 4: Modify Objects > Invert Objects

- Shrink the background area by a few pixels, to avoid edge effects.



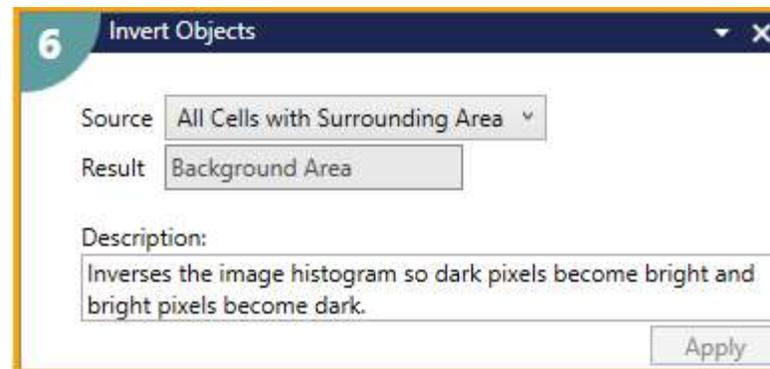
Step 4: Modify Objects > Shrink Objects

- Shrink the background area by a few pixels, to avoid edge effects.



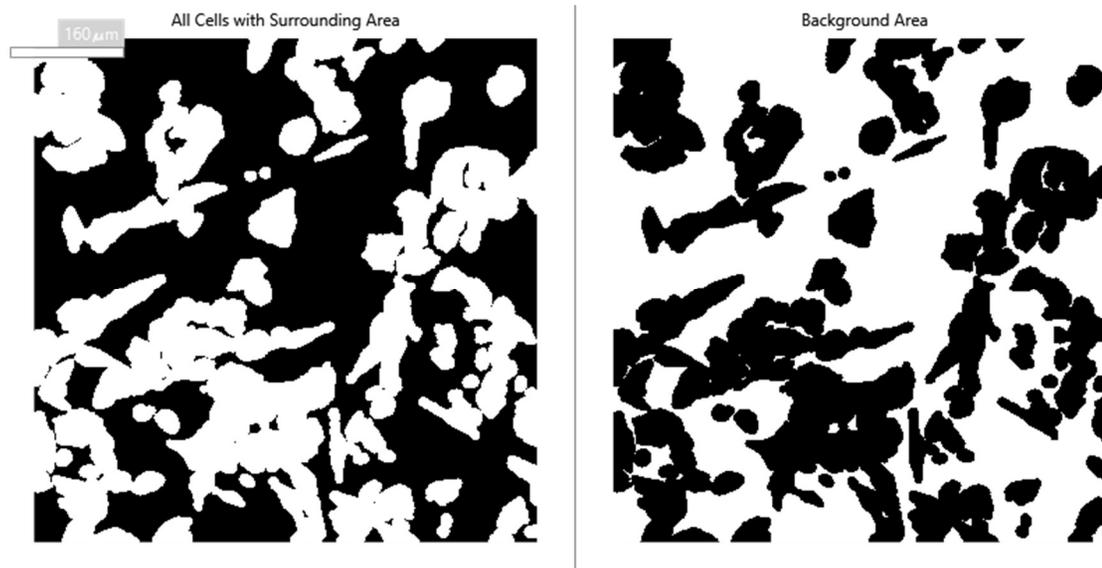
Step 5: Modify Objects > Invert Objects

- Invert the grown objects mask to select the background area



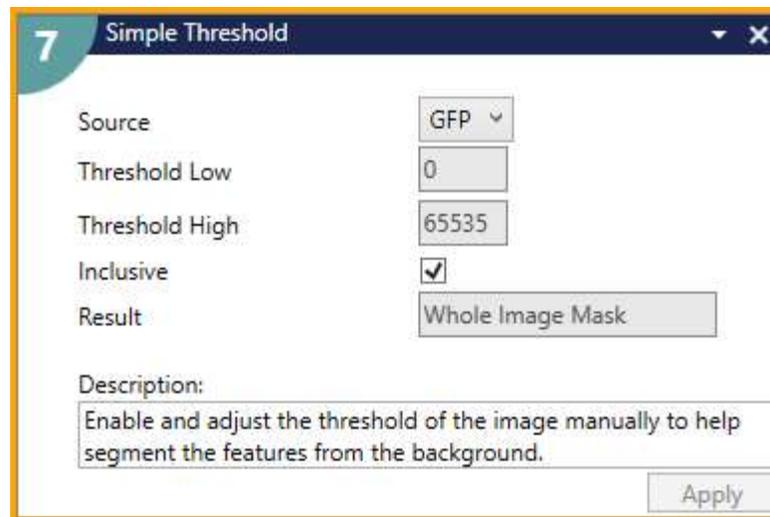
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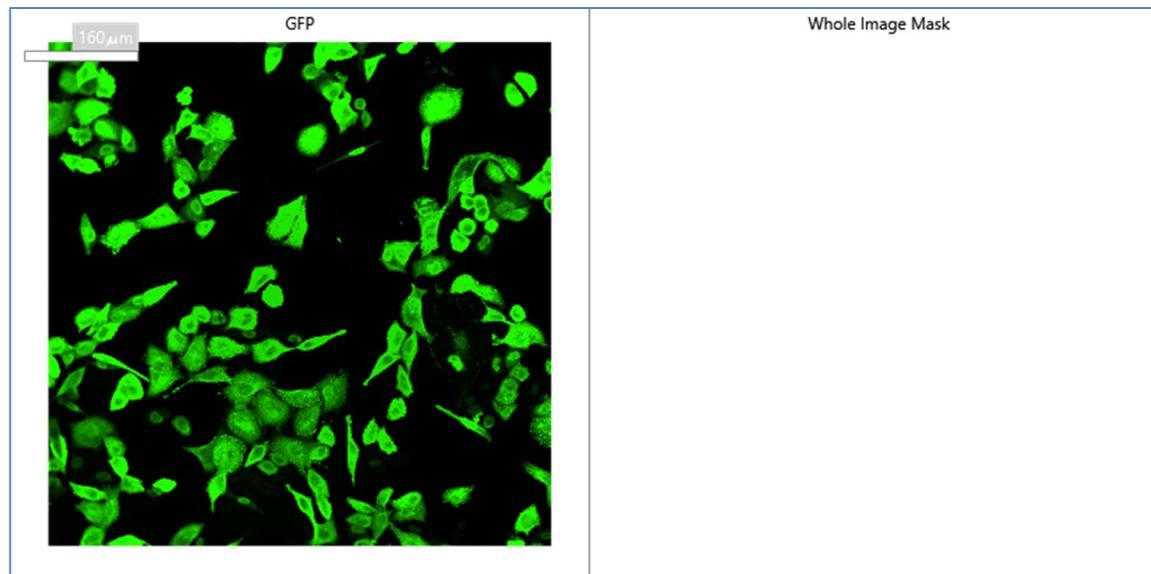
Step 6: Find Objects > Simple Threshold

- Set the threshold to 0-65535 on any of the input images to define a mask which represents the entire image area.



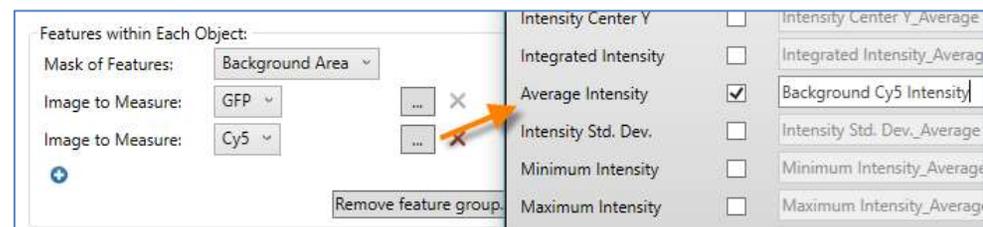
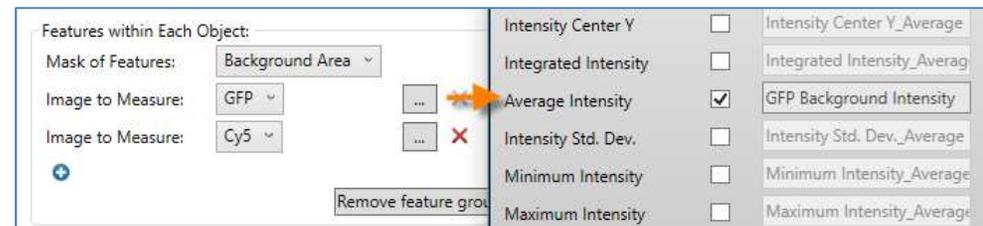
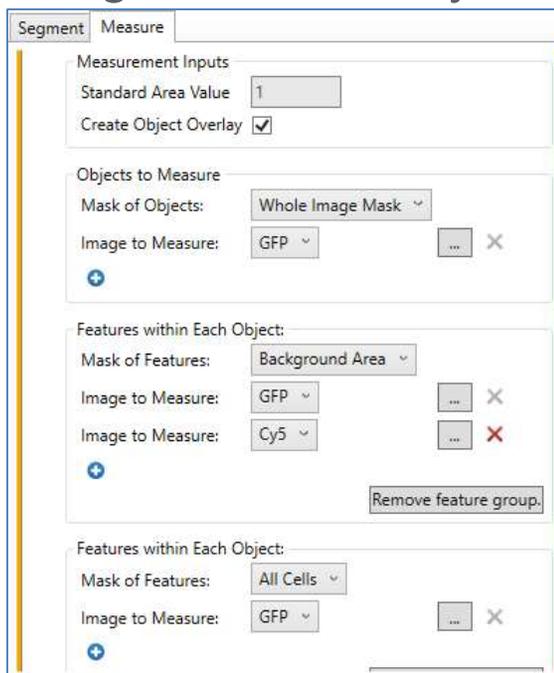
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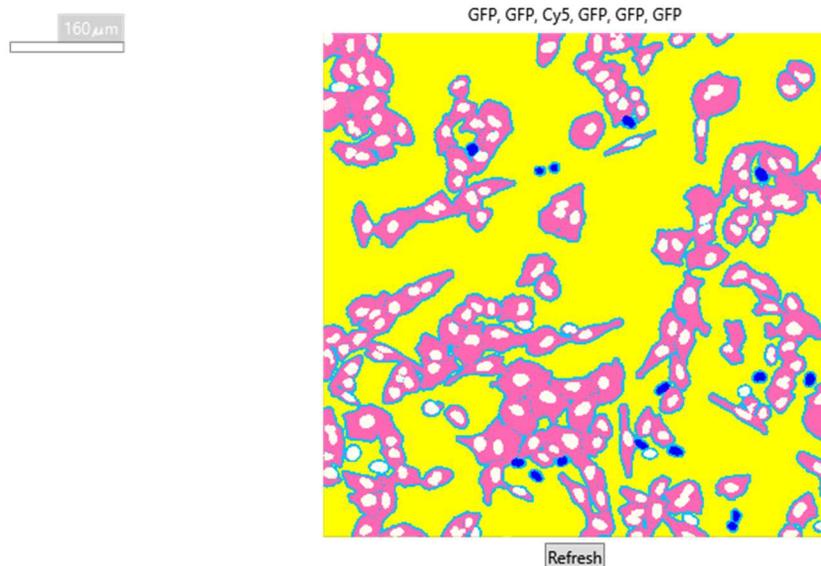
Step 7: Measure

- For Objects to Measure, select the Whole Image Mask. No measurements are needed unless you need intensity across the whole image.
- Include the background area as one of the feature groups and define the Average Intensity_Average measurement as your background intensity output(s).



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Layer	Color	Mask Name
1	Light Blue	Whole Image Mask
2	Yellow	Background Area
3	Dark Blue	All Cells
4	Pink	Positive Cells
5	White	Positive Nuclei



