

FIJI SAMPLE IMAGES

Fiji File Edit Image Process Analyze Plugins Window Help



- FILE**
- New ►
- Open... ⌘O
- Open Next ⌘⌘O
- Open Samples** ►
- Open Recent ►
- Import ►
- Close ⌘W
- Close All ⌘⌘W
- Save ⌘S
- Save As ►
- Revert ⌘R
- Page Setup...
- Print... ⌘P
- Export ►
- Quit
- Fix Funny Filenames
- Make Screencast

- AuPbSn 40 (56K)
- Bat Cochlea Volume (19K)
- Bat Cochlea Renderings (449K)
- Blobs** (25K) ⌘⌘B
- Boats (356K)
- Bridge (174K)
- Cardio (768K, RGB DICOM)
- Cell Colony (31K)
- Clown (14K)
- Confocal Series (2.2MB)
- CT (420K, 16-bit DICOM)
- Dot Blot (7K)
- Embryos (42K)
- Fluorescent Cells (400K)
- Fly Brain (1MB)
- Gel (105K)
- HeLa Cells (1.3M, 48-bit RGB)
- Image with Overlay
- Leaf (36K)
- Lena (68K)
- Line Graph (21K)
- Mitosis (26MB, 5D stack)
- MRI Stack (528K)
- M51 Galaxy (177K, 16-bits)
- Neuron** (1.6M, 5 channels)
- Nile Bend (1.9M)
- Organ of Corti (2.8M, 4D stack)
- Particles (75K)
- T1 Head (2.4M, 16-bits)
- T1 Head Renderings (736K)
- TEM Filter (112K)
- Tree Rings (48K)
- Cache Sample Images
- The New Lenna (95K)
- Malaria Sporozoites (9.2MB)
- First-instar brain (6.3MB)
- Centipede Drawing (45KB)
- Centipede Mivart (43KB)
- ddAC Neuron (84K)
- Sintered Alumina (2.6MB)
- Tracks for TrackMate (807K)
- Adelsons Squares
- Comparing Lengths
- Spirals
- Straight Lines
- Striped Circles

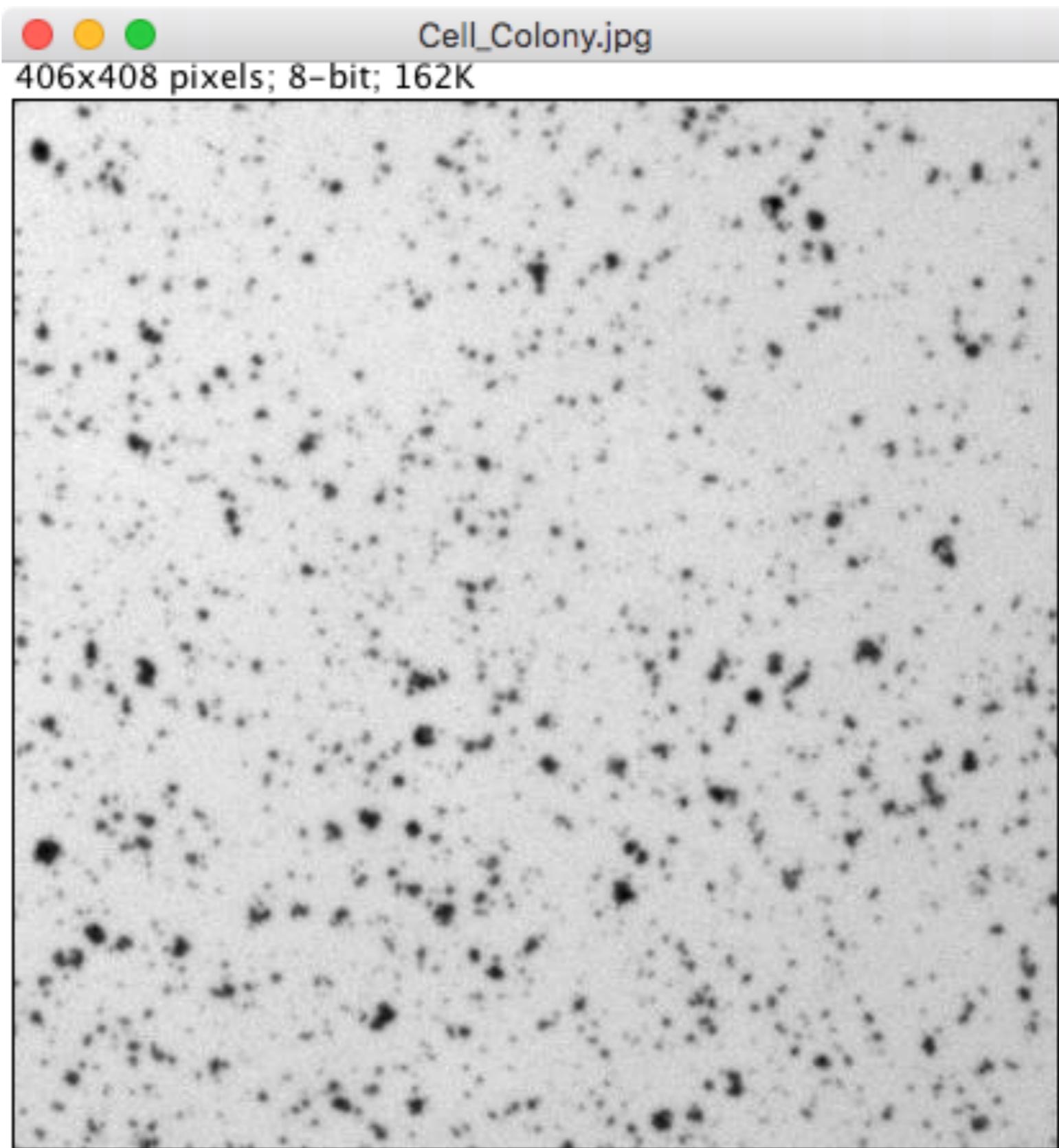
USING FIJI TO

EXPLORING MICROGRAPHS

SOURCE THAT IMAGE

CELL COLONY

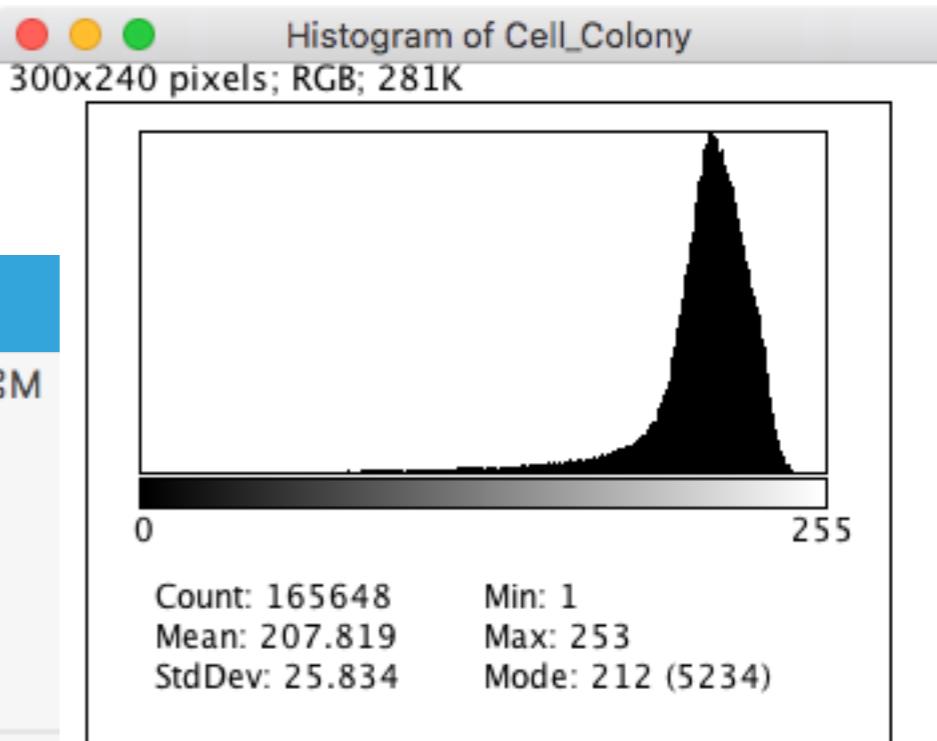
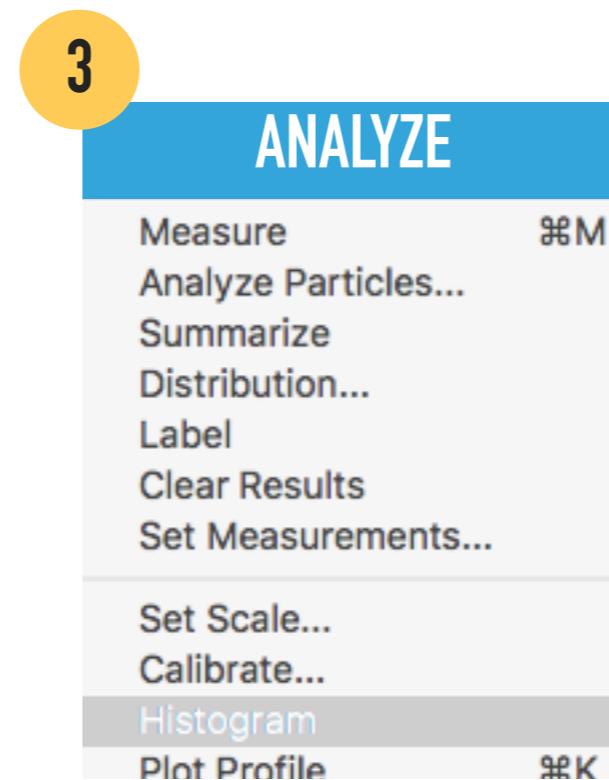
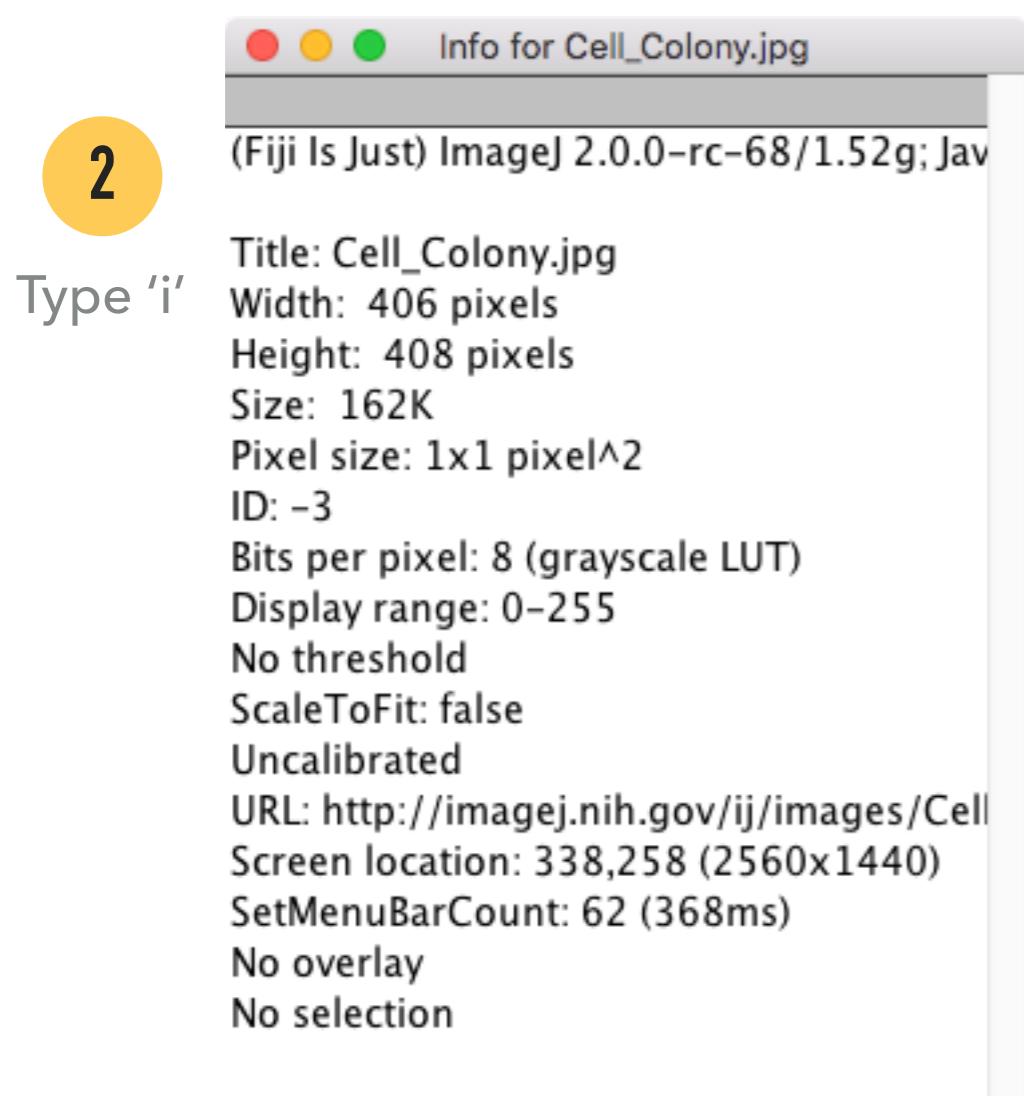
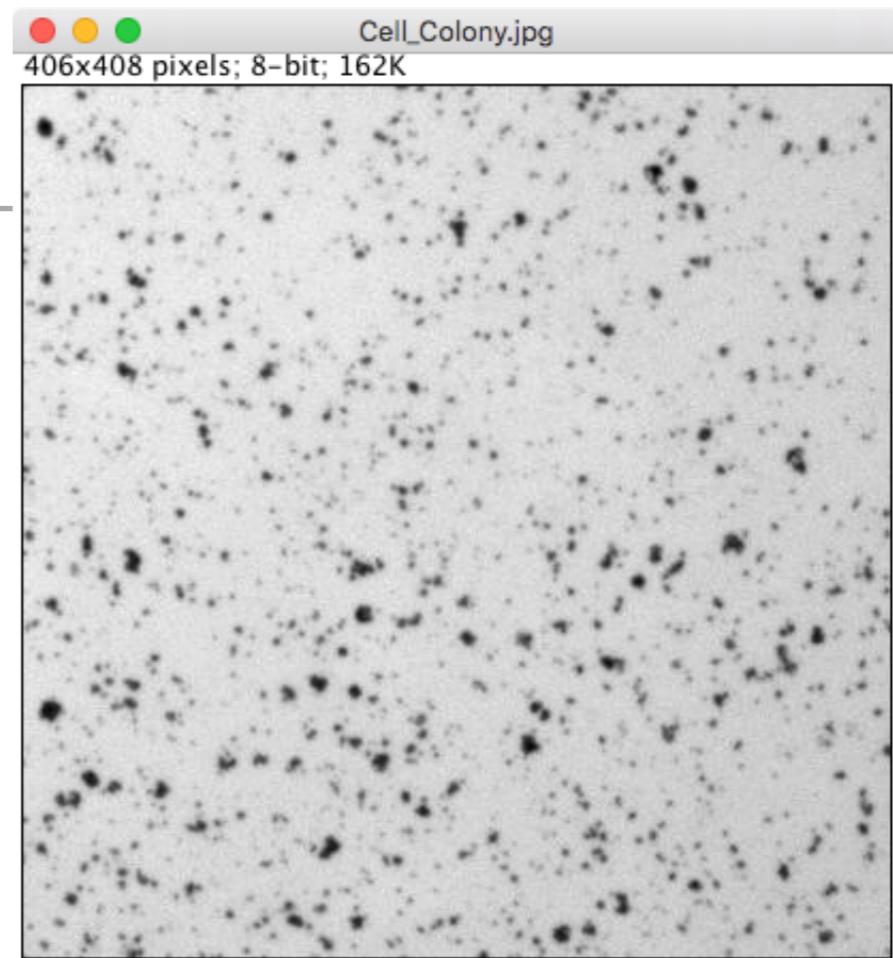
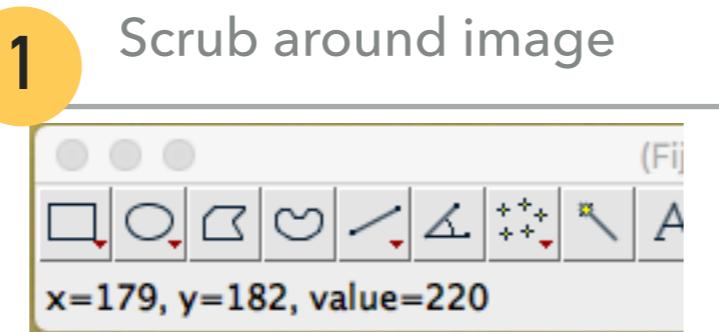
- ▶ Brightfield or Epifluorescence?
- ▶ Grayscale or RGB?
- ▶ Bit-depth?



SOURCE THAT IMAGE

CELL COLONY

- ▶ Brightfield
- ▶ Grayscale
- ▶ 8 Bit



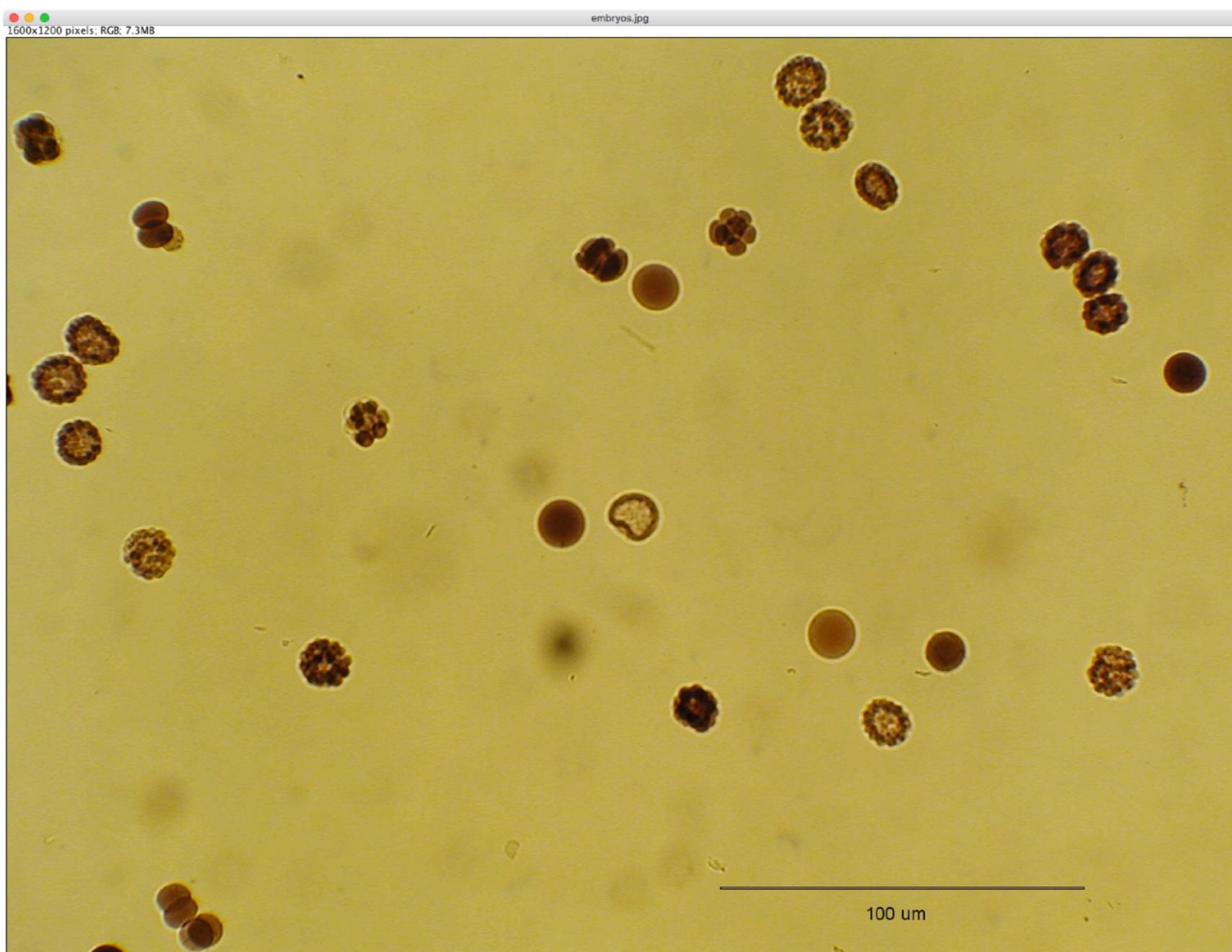
SOURCE THAT IMAGE

EMBRYOS

▶ Brightfield or Epifluorescence?

▶ Grayscale or RGB?

▶ Bit-depth?

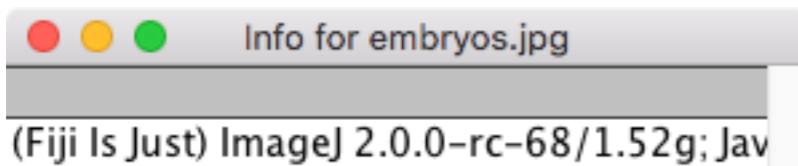


SOURCE THAT IMAGE

CELL COLONY

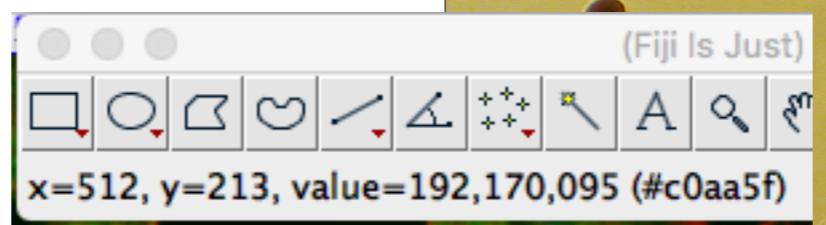
- ▶ Brightfield
- ▶ RGB
- ▶ 8 Bit

2



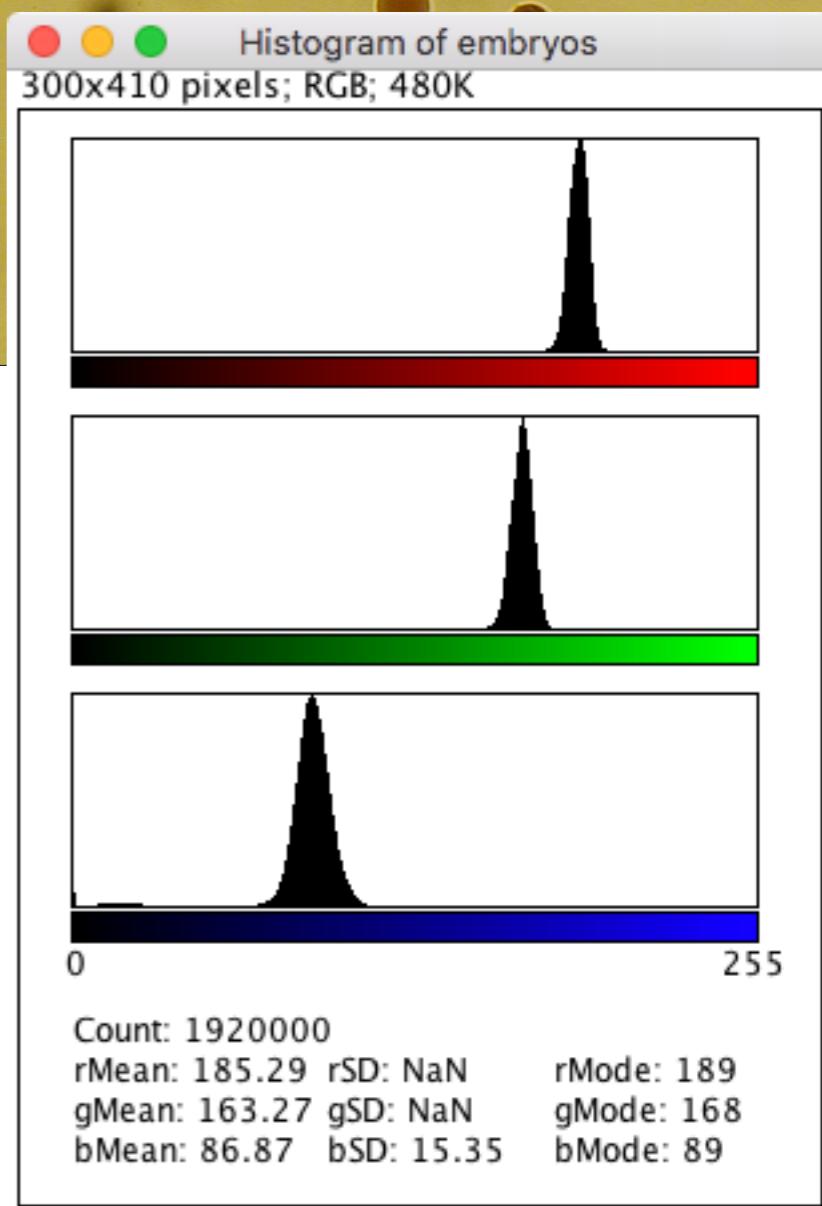
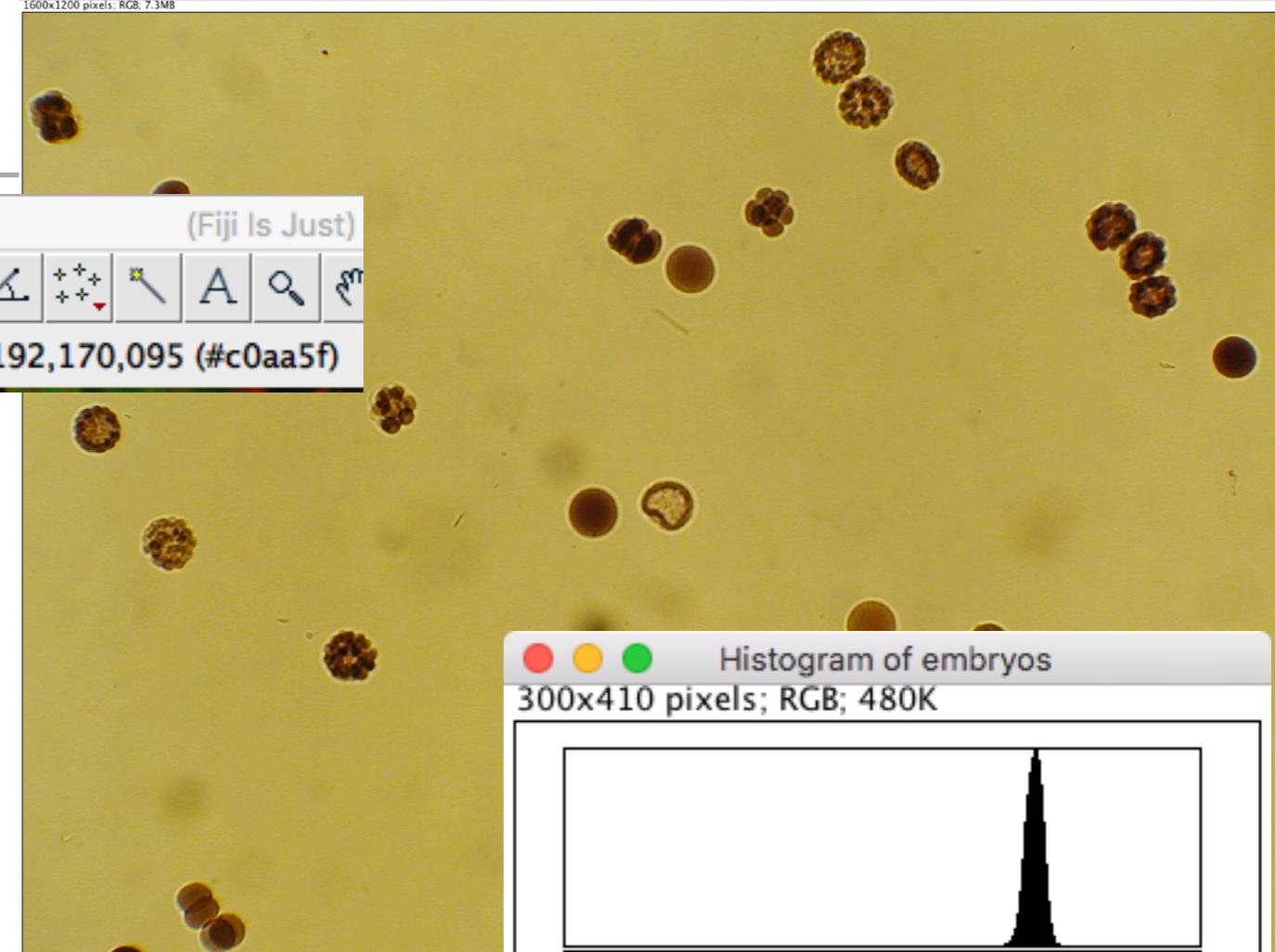
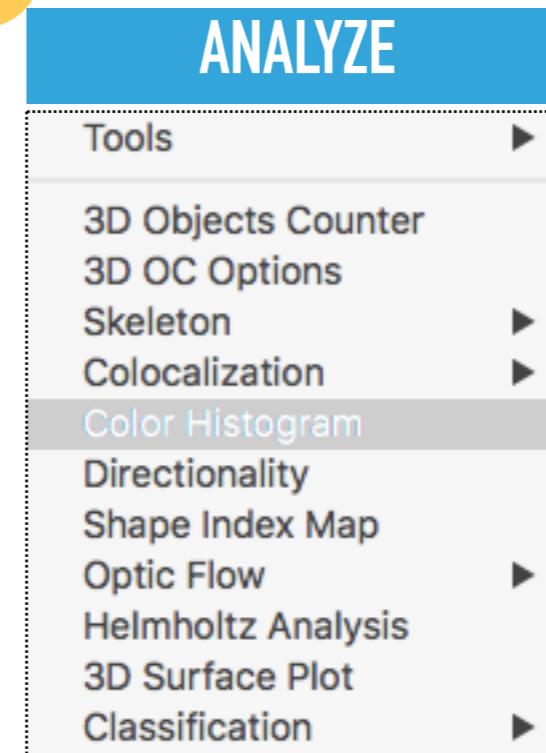
Title: embryos.jpg
Width: 1600 pixels
Height: 1200 pixels
Size: 7.3MB
Pixel size: 1x1 pixel^{^2}
ID: -7
Bits per pixel: 32 (RGB)
No threshold
ScaleToFit: false
Uncalibrated
URL: <http://imagej.nih.gov/ij/images/em>
Screen location: 34,241 (2560x1440)
SetMenuBarCount: 71 (368ms)
No overlay
No selection

1 Scrub around image



Type 'i'

3

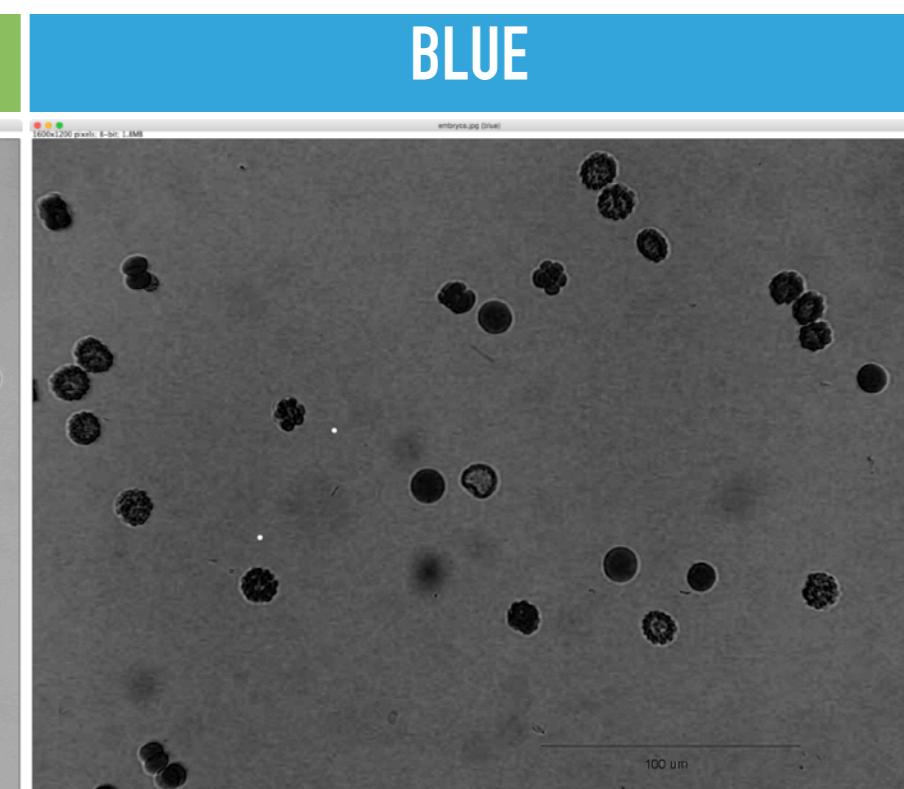
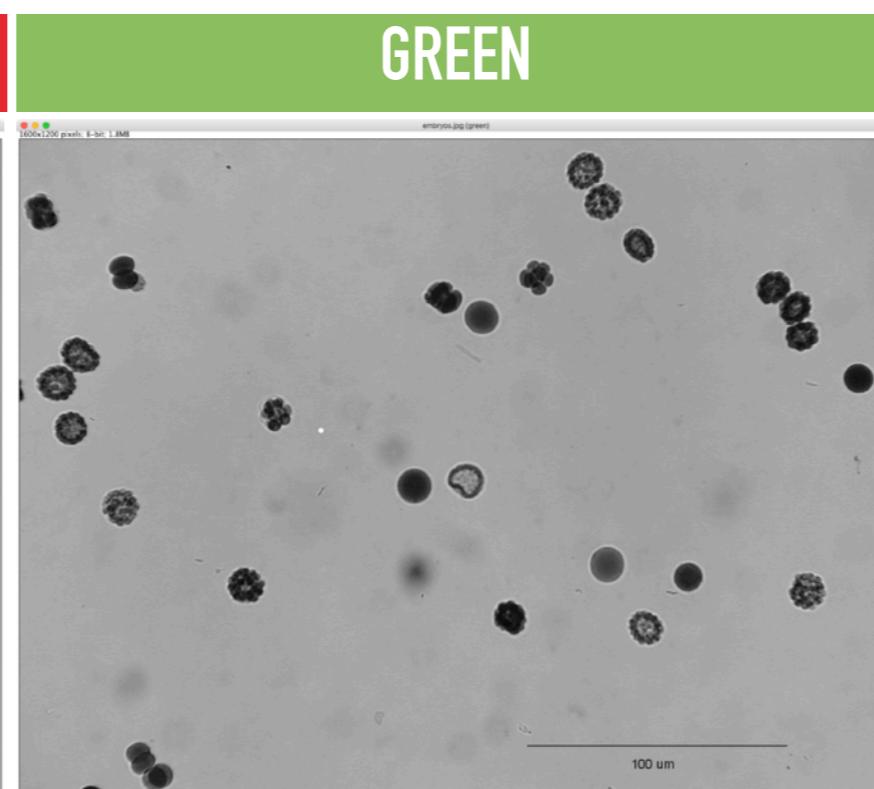
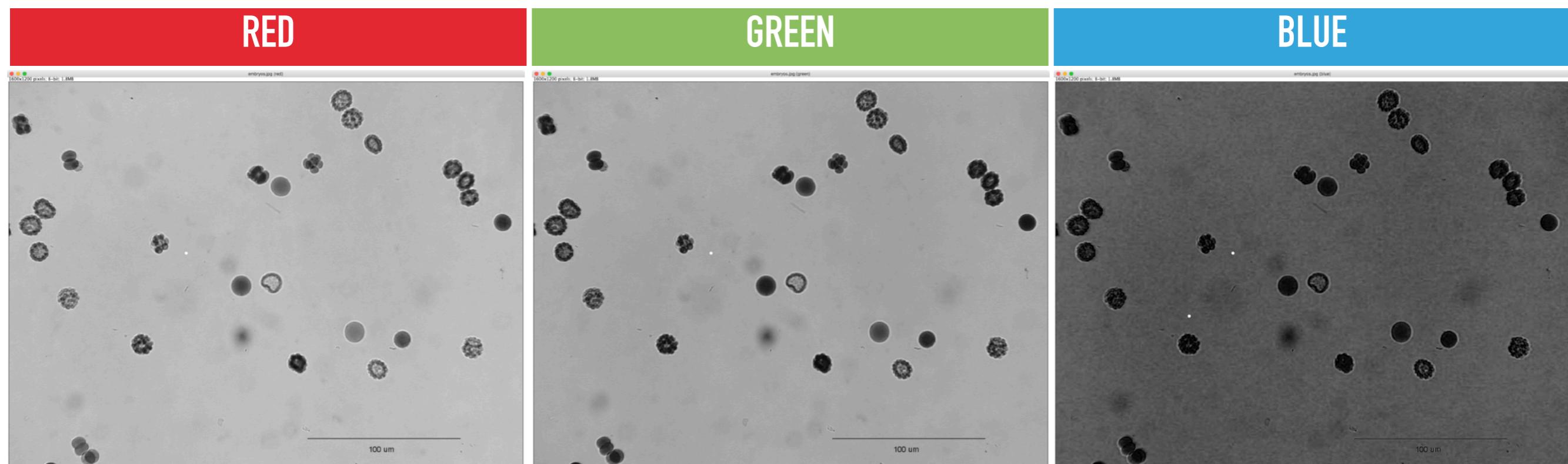
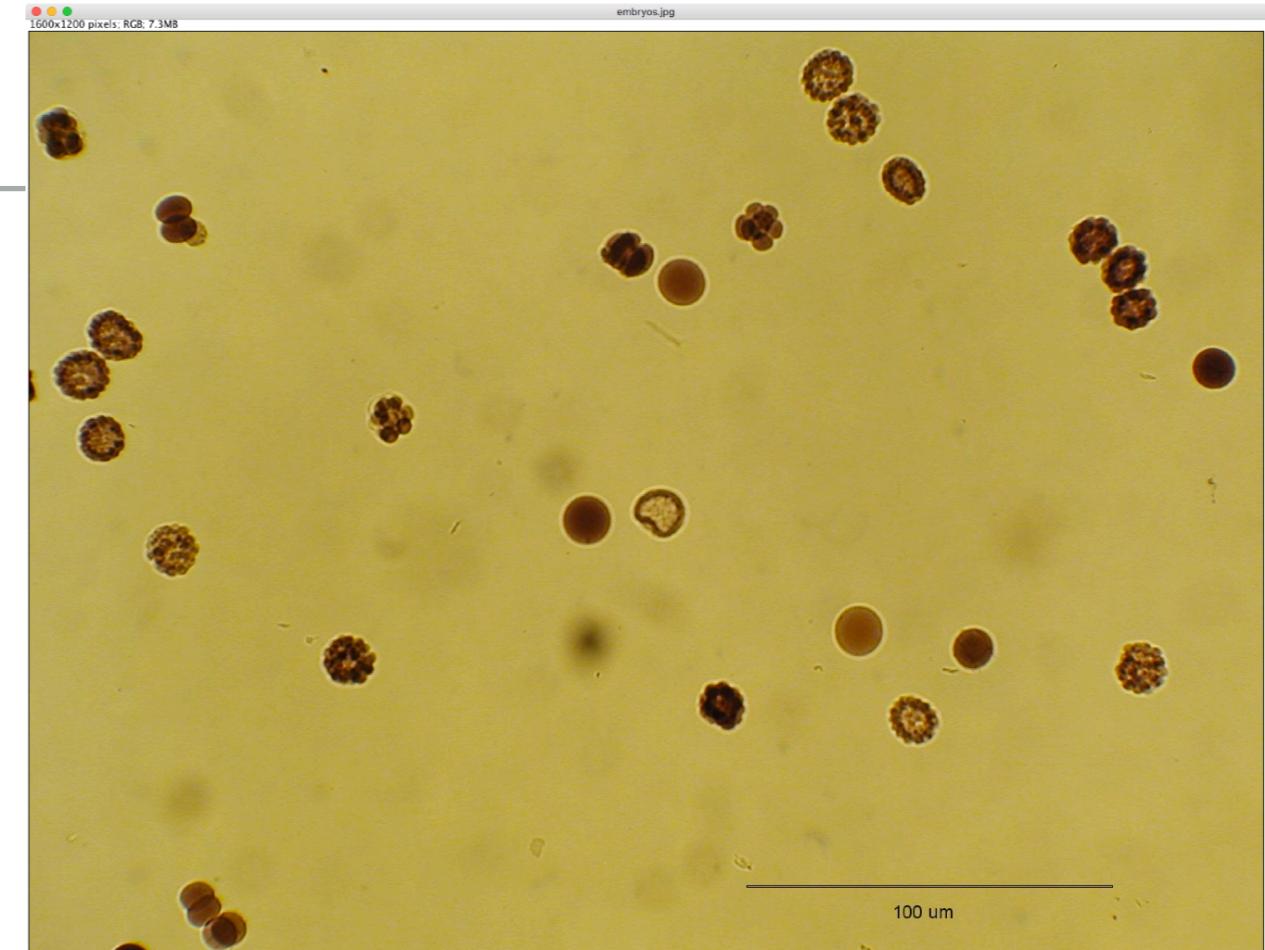


List

Copy

SOURCE THAT IMAGE

CELL COLONY

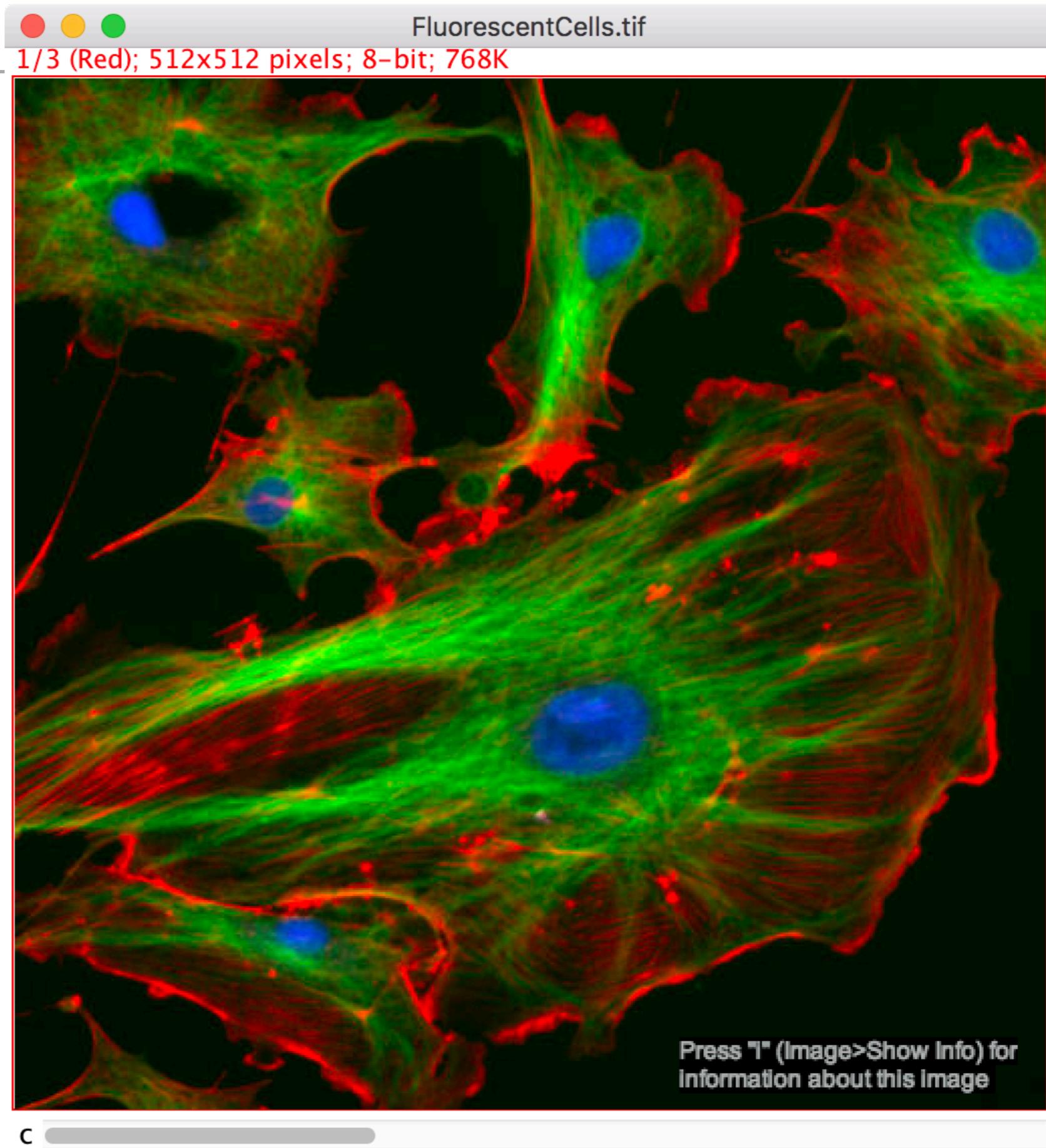


Notice how the objects in channels look almost the same (except for the shading).

SOURCE THAT IMAGE

FLUORESCENT CELLS

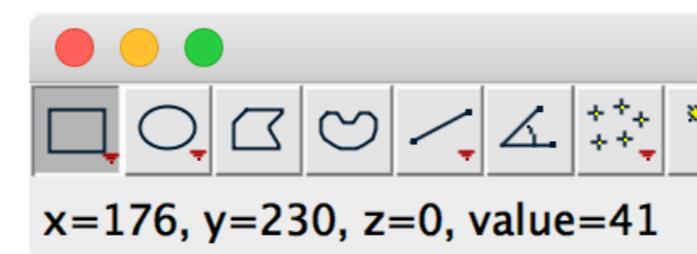
- ▶ Brightfield or Epifluorescence?
- ▶ Grayscale or RGB?
- ▶ Bit-depth?



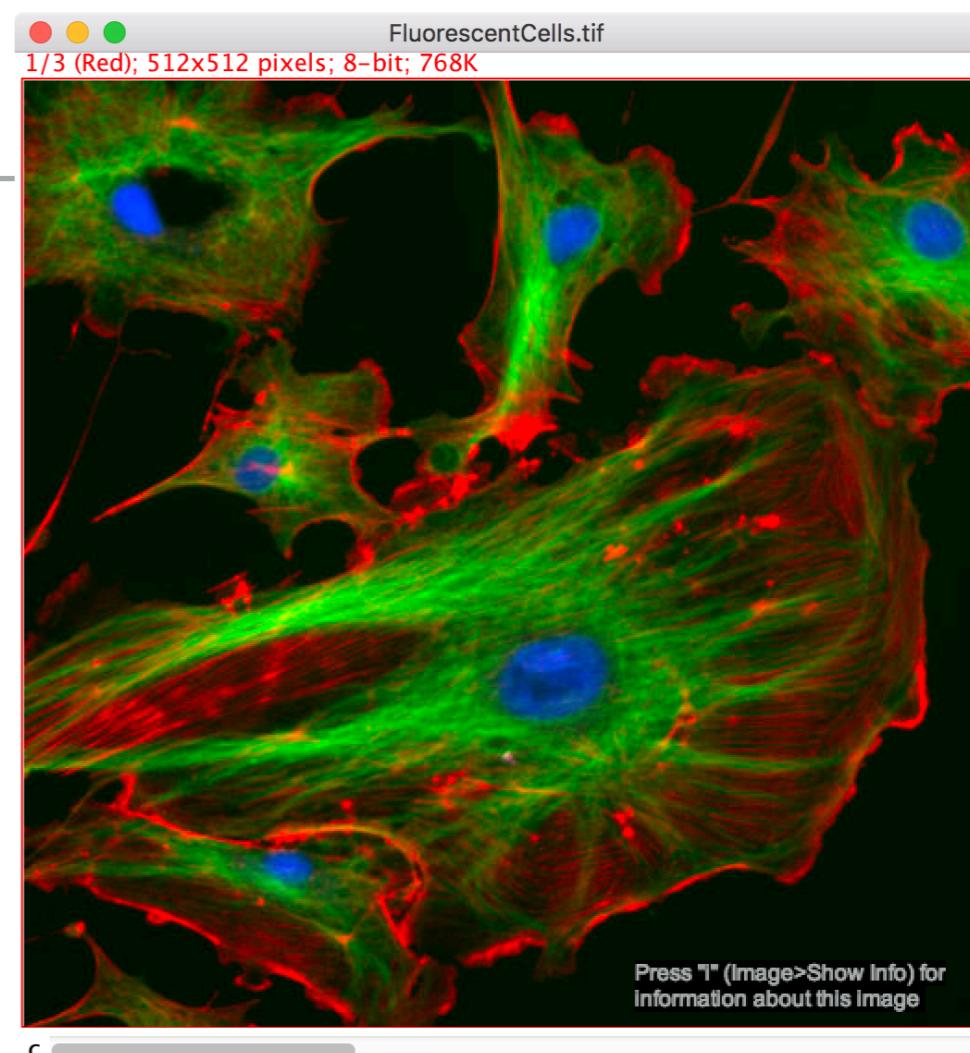
SOURCE THAT IMAGE

FLUORESCENT CELLS

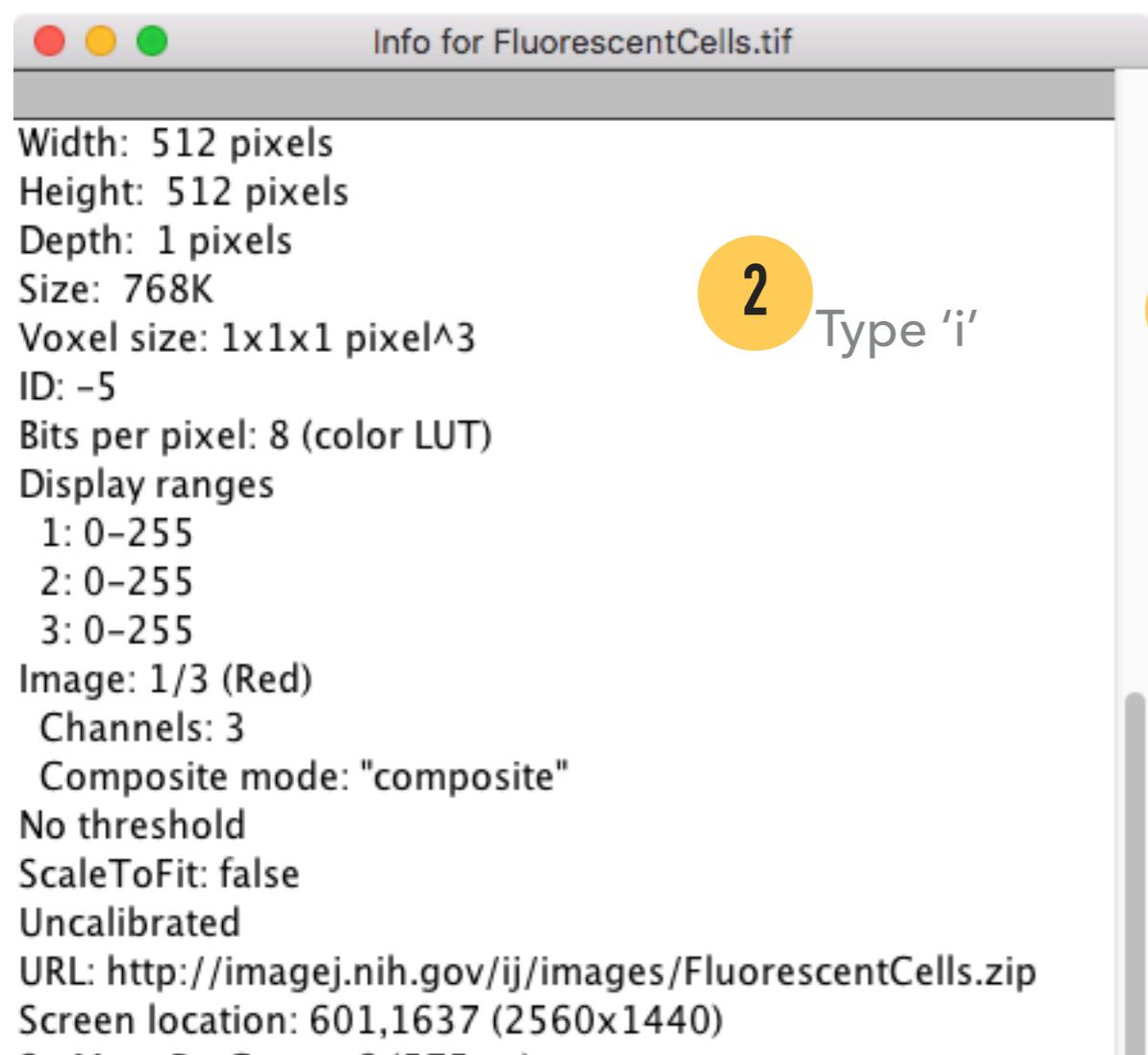
- ▶ Brightfield
- ▶ 8 Bit
- ▶ RGB? - grayscale images stitched together



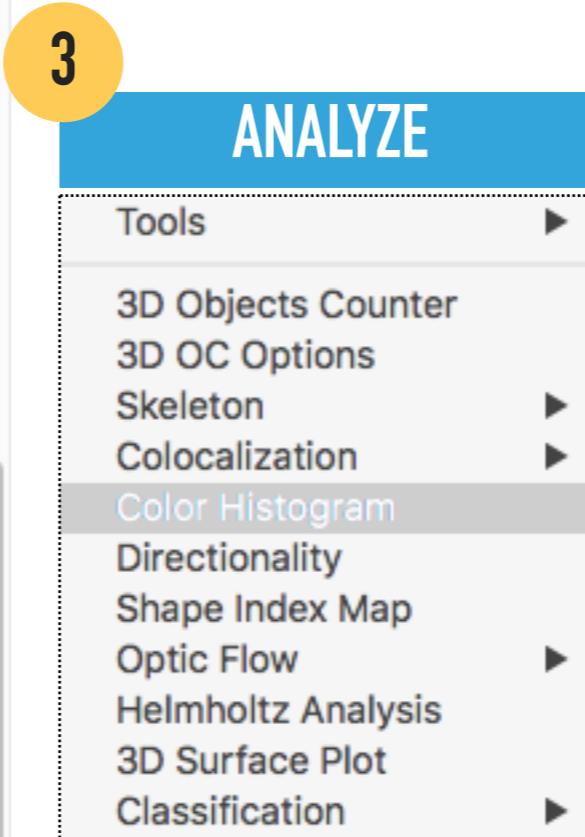
Only 1 value?



Press "I" (Image>Show Info) for information about this image



2 Type 'i'



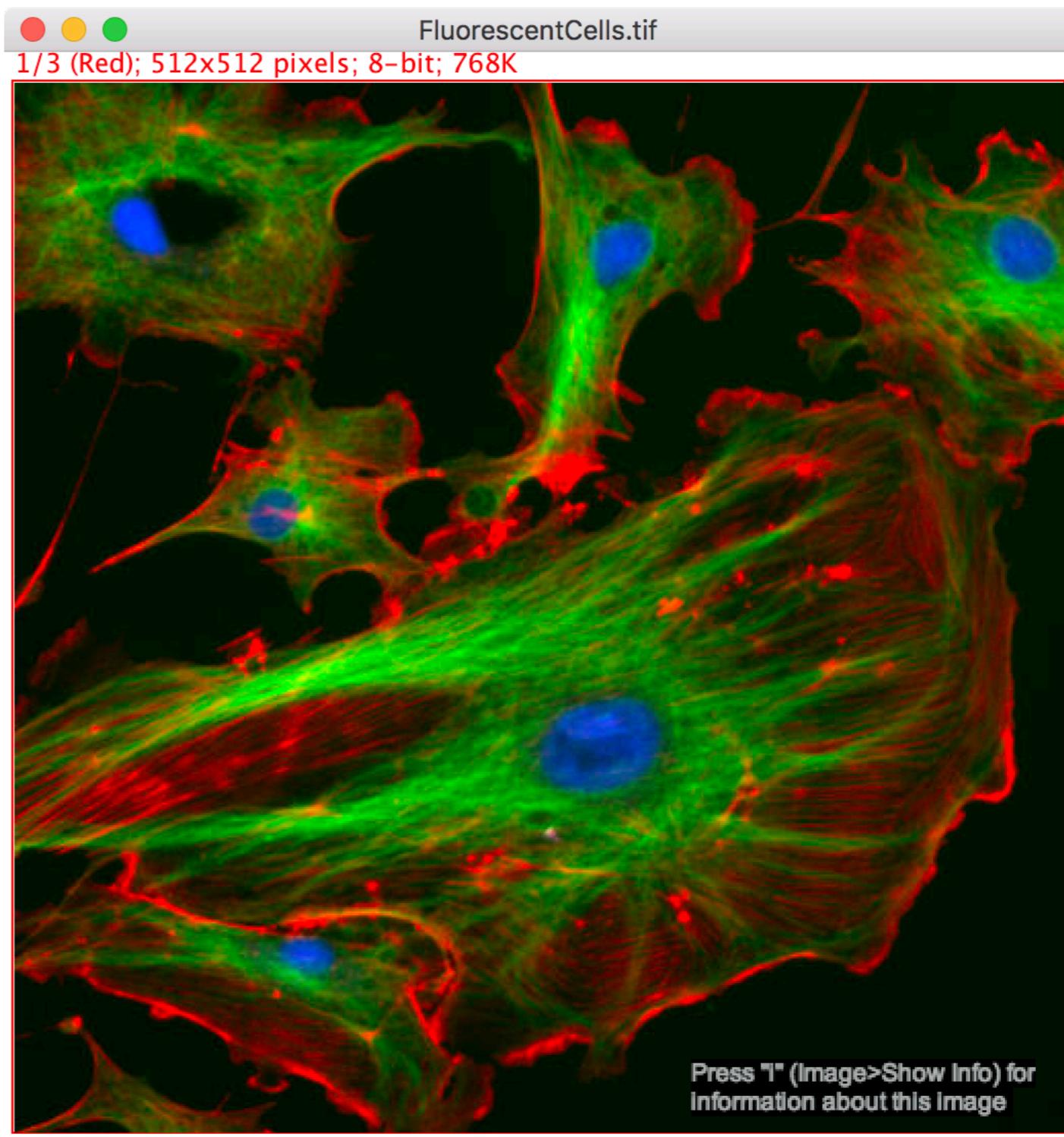
What's going on here?

RGB STACKS

FLUORESCENT CELLS

- ▶ An RGB Stack - like 3 images in one
- ▶ Red title a give-away: "1/3 (Red)"
 - ▶ Means you are currently looking at the red channel
- ▶ Also Notice the channel scroll bar at the bottom
- ▶ But Image Color doesn't change when you scrub through the channels
 - ▶ But title color does...

Channel Title



Channel scroll bar

RGB STACKS

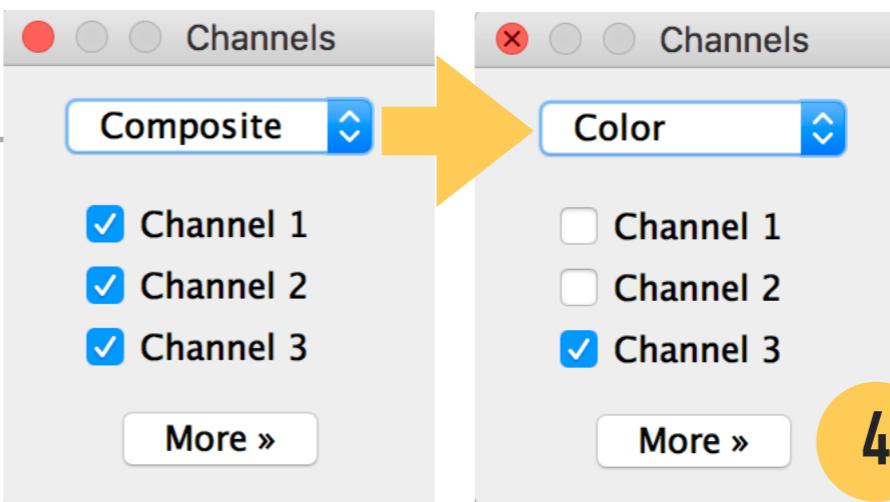
FLUORESCENT CELLS

1

IMAGE:COLOR

- Split Channels
- Merge Channels...
- Arrange Channels...
- Channels Tool... ⇧⌘Z
- Stack to RGB
- Make Composite
- Show LUT
- Display LUTs
- Edit LUT...
- Color Picker... ⇧⌘K
- Colour Deconvolution
- Dichromacy
- Simulate Color Blindness
- Retinex
- Replace Red with Magenta
- Replace Red with Magenta (system clipboard)
- Average Color
- RGB to CIELAB
- RGB to Luminance
- Set Color By Wavelength

2

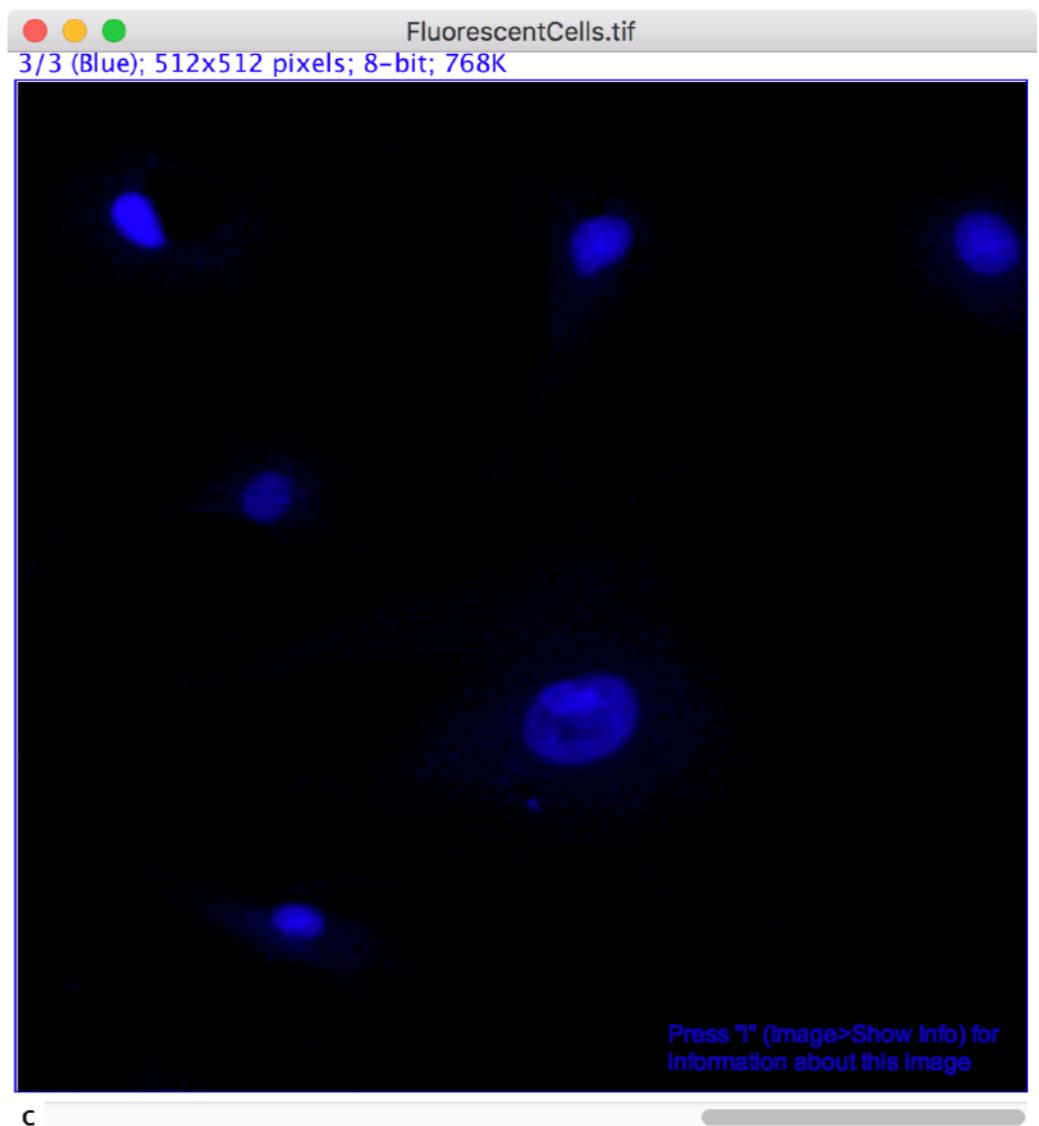


4

Change blue to cyan

3

Now each
“Channel”
visible



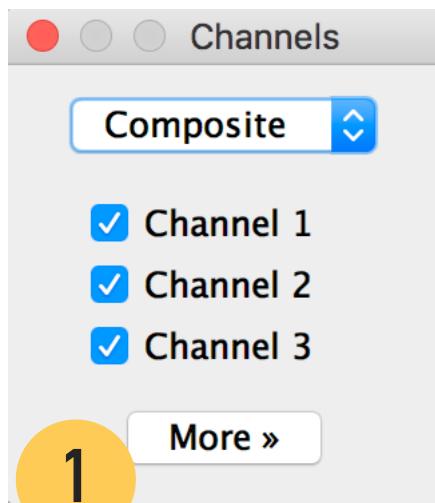
5

Switch back to composite. Change Cyan back to blue

- Make Composite
- Convert to RGB
- Split Channels
- Merge Channels...
- Edit LUT...
- Red
- Green
- Blue
- Cyan
- Magenta
- Yellow
- Grays

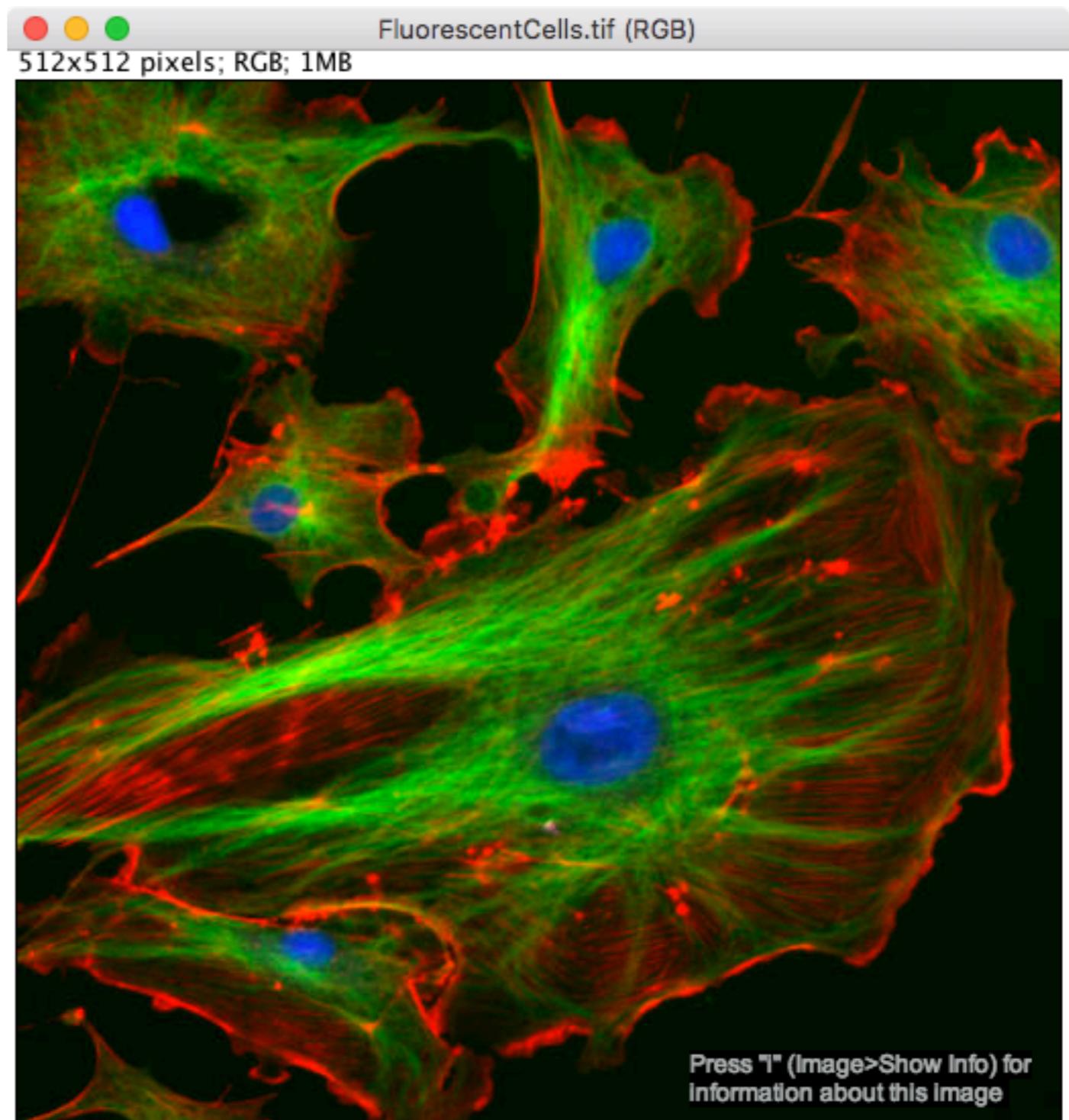
RGB STACKS

FLUORESCENT CELLS

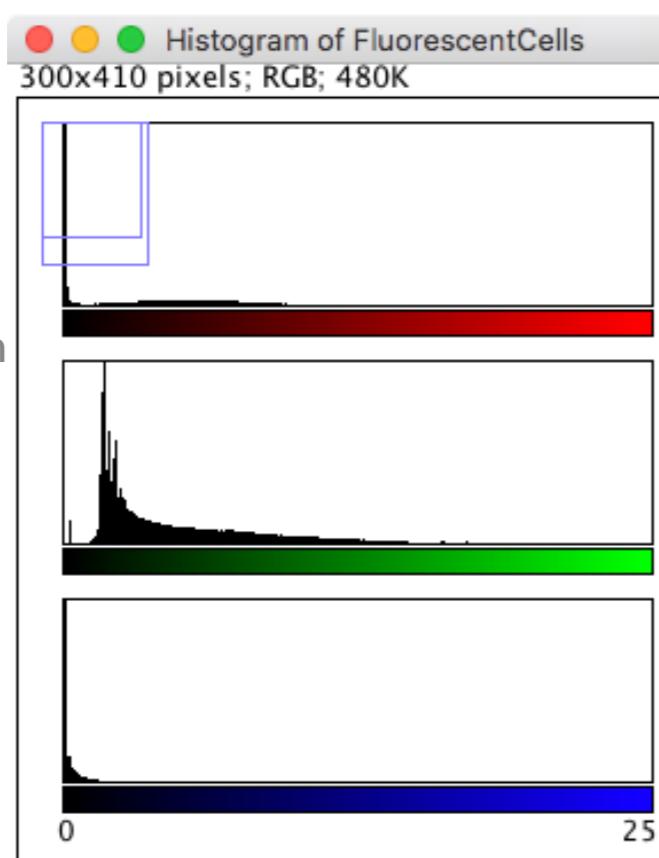


- 2
- Make Composite
 - Convert to RGB
 - Split Channels
 - Merge Channels...
 - Edit LUT...
- Red
 - Green
 - Blue
 - Cyan
 - Magenta
 - Yellow
 - Grays

Notice Title now includes RGB and no channel indicator



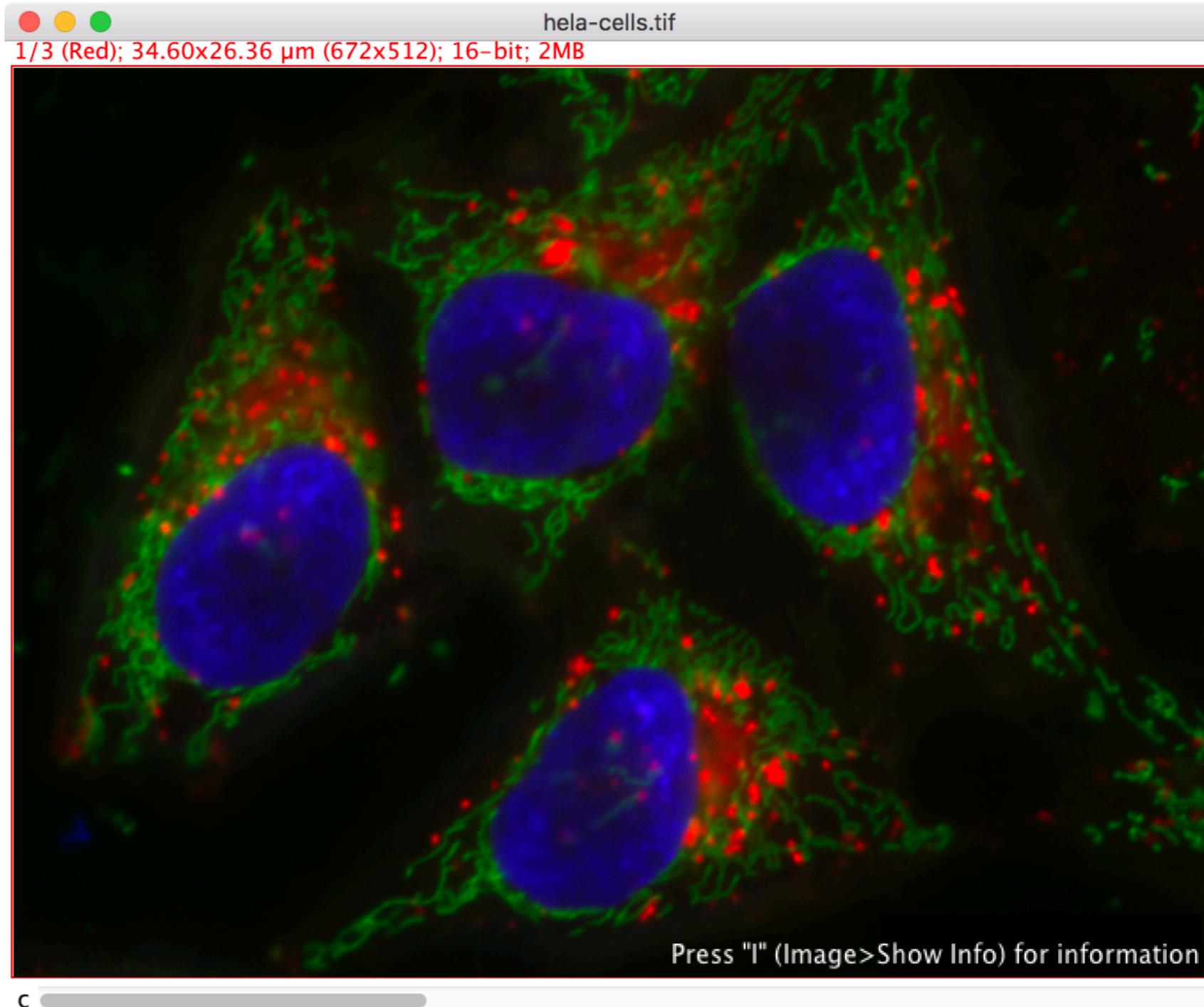
Color histogram
now possible



SOURCE THAT IMAGE

HELA CELLS

- ▶ Brightfield or Epifluorescence?
- ▶ Grayscale or RGB?
- ▶ Bit-depth?
- ▶ Can you create a histogram? (not color)
- ▶ Can you remove the text?
- ▶ What happens if you split channels?
- ▶ Can you make a BRG image?



MERGING CHANNELS (AND REORGANIZING)

HELA CELLS

IMAGE:COLOR

1

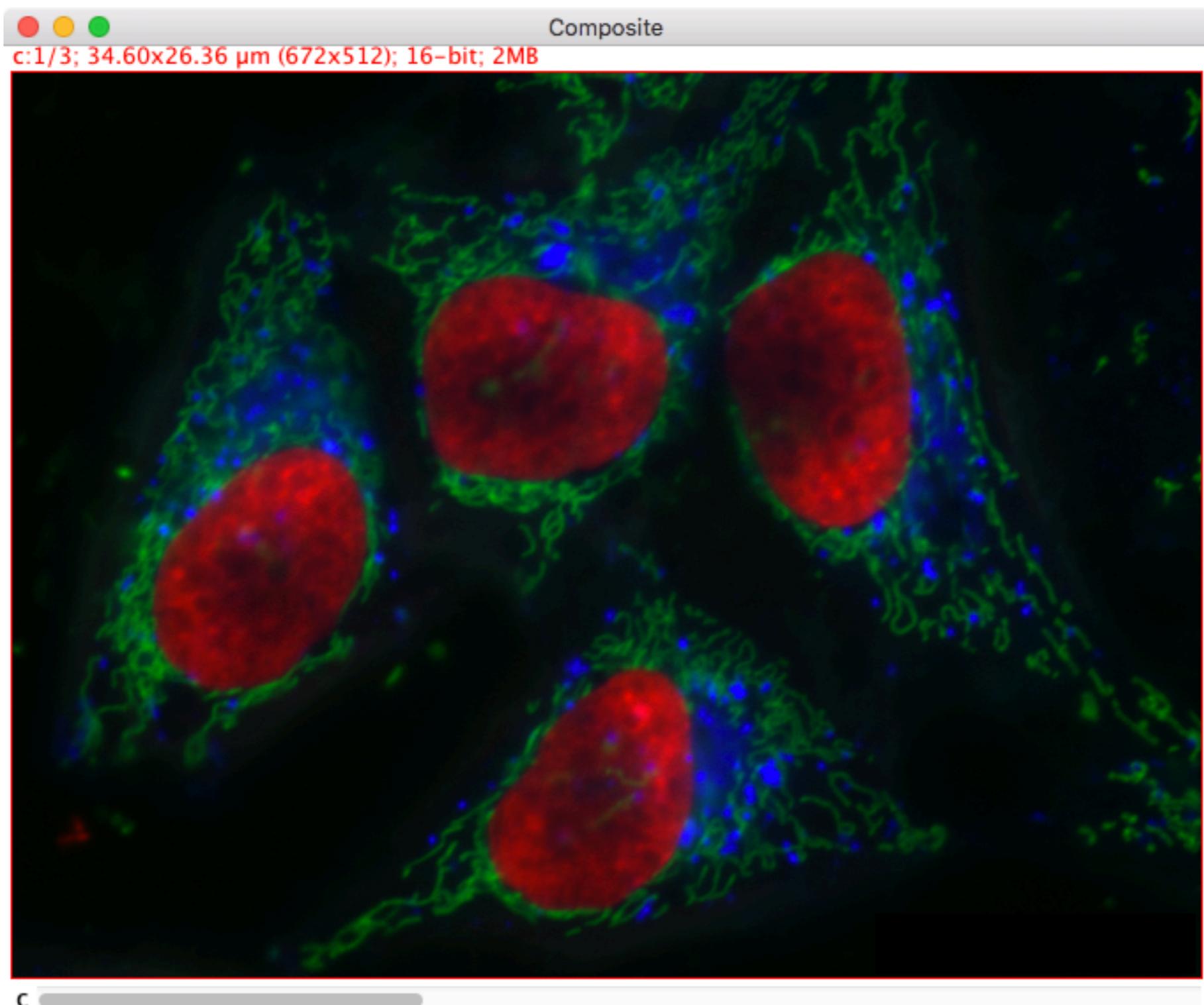
Split Channels
Merge Channels...
Arrange Channels...
Channels Tool...
⇧⌘Z

● ● ● Merge Channels

C1 (red): C3-hela-cells.tif
C2 (green): C1-hela-cells.tif
C3 (blue): C2-hela-cells.tif
C4 (gray): *None*
C5 (cyan): *None*
C6 (magenta): *None*
C7 (yellow): *None*

Create composite
 Keep source images
 Ignore source LUTs

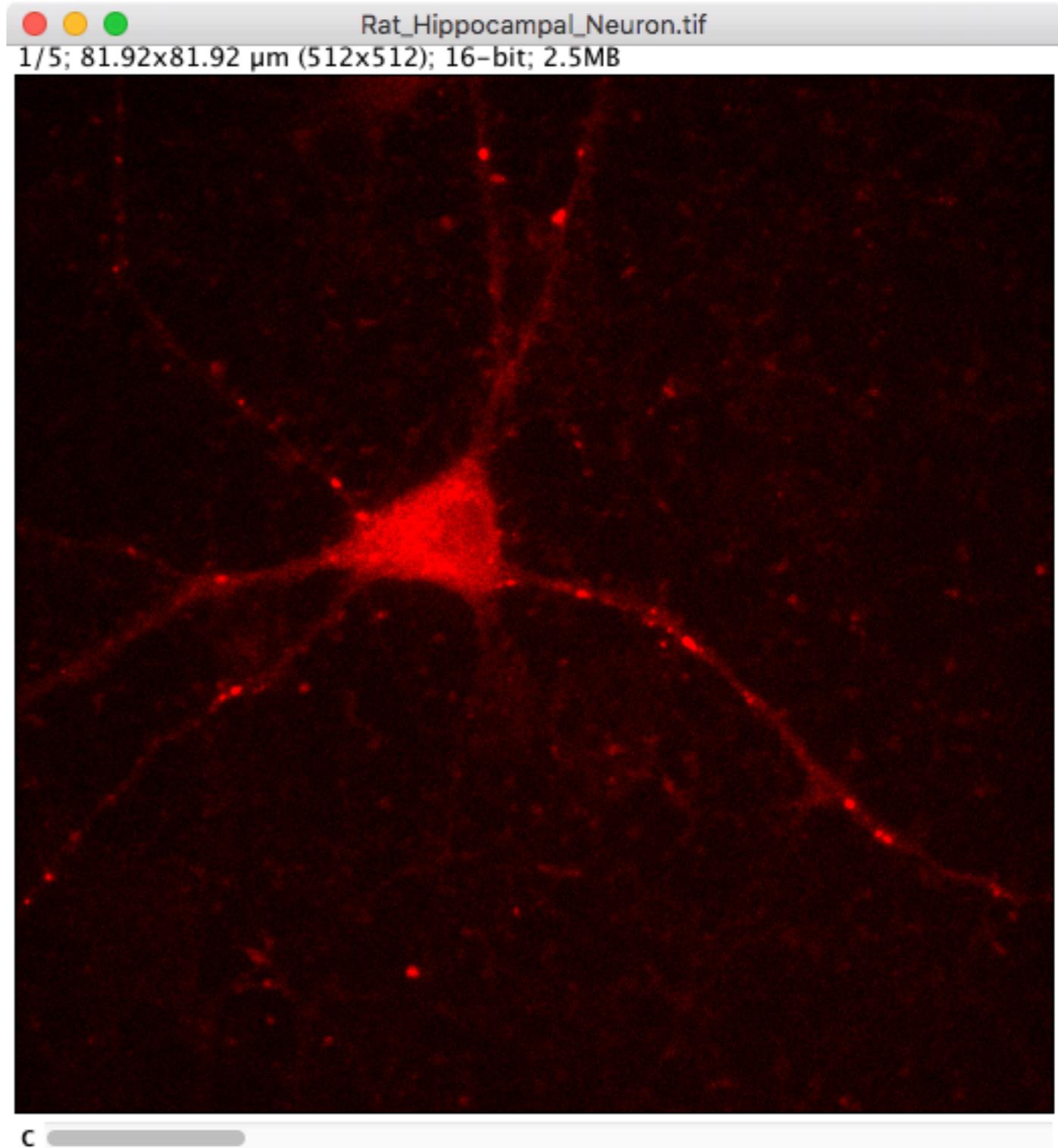
Cancel OK



SOURCE THAT IMAGE

NEURON

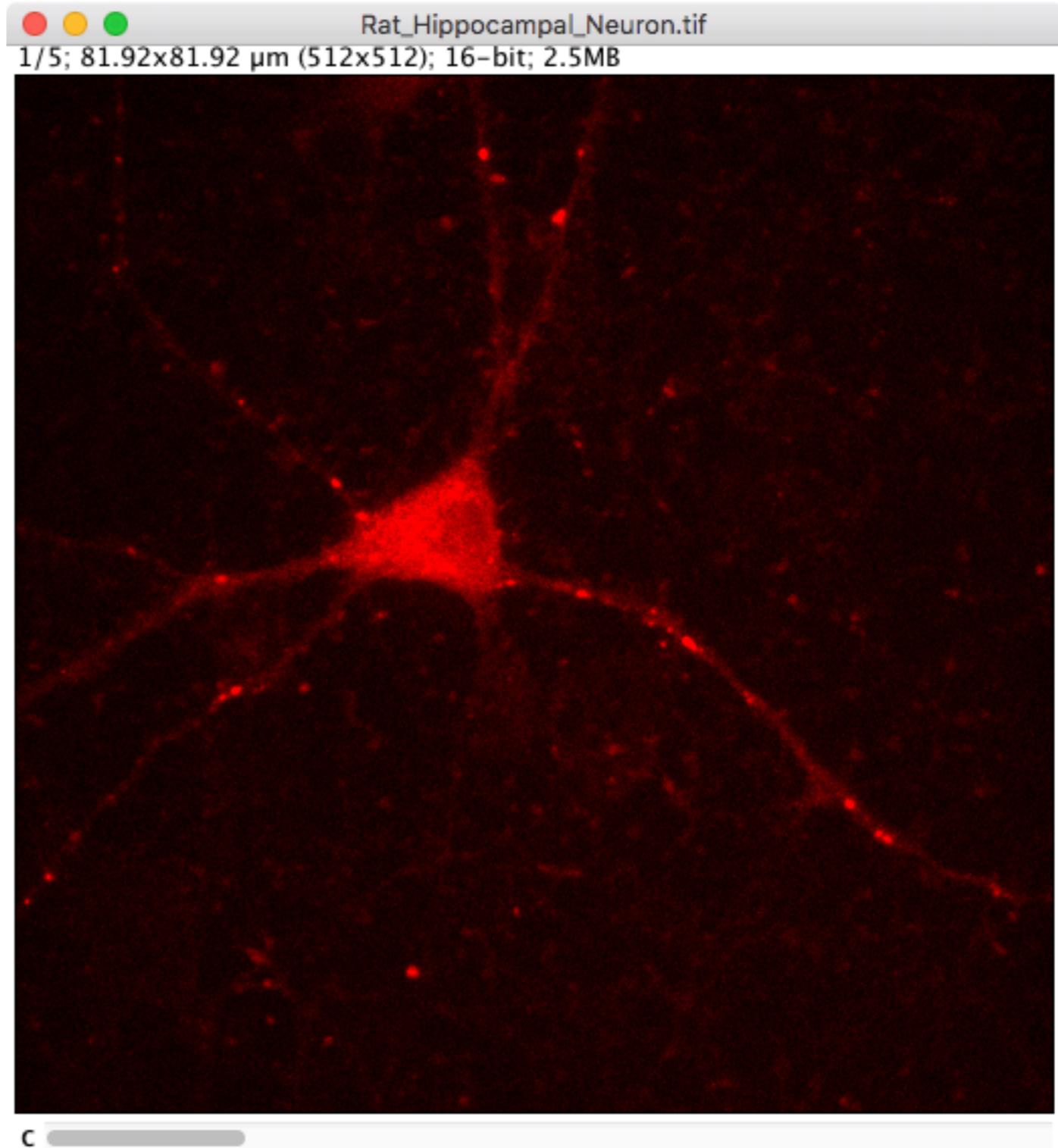
- ▶ Brightfield or Epifluorescence?
- ▶ Grayscale or RGB?
- ▶ Bit-depth?
- ▶ How many Channels?
 - ▶ What are we seeing?



SOURCE THAT IMAGE

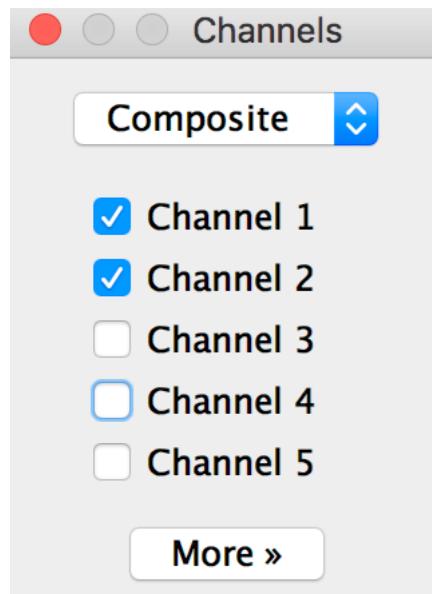
NEURON

- ▶ Brightfield or Epifluorescence?
 - ▶ Both!
- ▶ Grayscale or RGB?
 - ▶ Multiple grayscale images stitched together
- ▶ Bit-depth?
 - ▶ 16 bit
- ▶ How many Channels?
 - ▶ 5
- ▶ How would you create a composite view (multiple colors)?



SIGNAL OVERLAP?

NEURON



Looks like green and red don't overlap in axons but do in soma

Do green and blue overlap?

How many cell with nuclei are there? (C4 and C5)

