

MICROSCOPY

Sample Prep

1. Define the microscopy analyses and conditions available for experimentation.
Note: Brightfield analysis does not require conditions to be specified.

Analysis

Dye/Stain

Antibody-labeling IF

Antibody-labeling IHC

Antibody-labeling IHC

Brightfield

Select Analysis

ADD

Conditions

Dye/Stain Name

Antibody Name

x

Antibody 1

x

Antibody 2

x

x

Conditions

x

Notes: The first row cannot be deleted, but other added rows can be deleted.

If brightfield is selected, then no additional conditions need to be specified.

The conditions text box is grayed out until an analysis is selected. The text within the conditions text box updates with suggestions on how to fill the text box in once the analysis is selected. For example, if the user selects Dye/Stain, the italicized gray text may say “DAPI”.

BACK

SAVE AND CONTINUE

2. Define which of the following microscopy analyses and conditions will be available for each of your samples.

| Sample | Available? | Analysis Type | Conditions |
|---|-------------------------------------|-----------------------|----------------|
| 1. Strain A, Treatment A, 100 ng/mL, 30 C | <input checked="" type="checkbox"/> | Dye/Stain | Dye/Stain Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IF | Antibody Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 1 |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 2 |
| | <input checked="" type="checkbox"/> | Brightfield | |
| 2. Strain A, Treatment A, 100 ng/mL, 37 C | <input checked="" type="checkbox"/> | Dye/Stain | Dye/Stain Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IF | Antibody Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 1 |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 2 |
| | <input checked="" type="checkbox"/> | Brightfield | |
| 3. Strain A, Treatment B, 200 ng/mL, 30 C | <input checked="" type="checkbox"/> | Dye/Stain | Dye/Stain Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IF | Antibody Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 1 |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 2 |
| | <input checked="" type="checkbox"/> | Brightfield | |
| 4. Strain A, Treatment B, 200 ng/mL, 37 C | <input checked="" type="checkbox"/> | Dye/Stain | Dye/Stain Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IF | Antibody Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 1 |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 2 |
| | <input checked="" type="checkbox"/> | Brightfield | |
| 5. Strain B, Treatment A, 100 ng/mL, 30 C | <input checked="" type="checkbox"/> | Dye/Stain | Dye/Stain Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IF | Antibody Name |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 1 |
| | <input checked="" type="checkbox"/> | Antibody-labeling IHC | Antibody 2 |
| | <input checked="" type="checkbox"/> | Brightfield | |

Note: all of the samples and microscopy analysis/conditions are automatically selected. The instructor can then unselect any combination that does not apply for a sample. A sample does not need to have a microscopy analysis/condition combination selected.

Do we need Clear all and Select all buttons at the bottom of the “Available” column?

If the instructor inputs multiple dye/stains and/or multiple antibodies, then they appear as additional sub-rows for each sample here (as shown here).

This list of samples continues for as many samples as the instructor has defined in the experiment setup

Analyze

3. Select the image(s) associated with each sample and its corresponding microscopy analysis and conditions.

Note: We recommend that images are at least 500x500 pixels for optimal viewing in StarCellBio and that images for a particular microscopy analysis are obtained using the same objective.

A. Dye/Stain, Dye/Stain Name

Objective

Copy to other sample(s)

1. Strain A, Treatment A, 100 ng/mL, 30 C

ADD IMAGE(S)

4X, 20X

☐

Once the instructor clicks “Add Image(s)” a pop up window will appear where the instructor can select an image from his/her computer. See page 4.

2. Strain A, Treatment A, 100 ng/mL, 37 C

ADD IMAGE(S)

4X, 20X

☐

Once an image is selected, then the instructor can apply the image(s) to the rest of the samples. The buttons are grayed out until an image is selected for each sample. See pages 5-7.

3. Strain A, Treatment B, 200 ng/mL, 30 C

ADD IMAGE(S)

4X, 20X

☐

Does the instructor need to upload the images into a repository in their instructor account or should he/she upload them directly from their computer into the appropriate sample? We are going to go with the second option for now with the repository being built later.

4. Strain A, Treatment B, 200 ng/mL, 37 C

ADD IMAGE(S)

4X, 20X

☐

Based on the positioning of the objective text box on page 5, it may be best to exclude the grayed out objective column on this page and only include the objective text box once an image has been selected.

5. Strain B, Treatment A, 100 ng/mL, 30 C

ADD IMAGE(S)

4X, 20X

☐

B. Antibody-labeling IF, Antibody Name

Note: For antibody-labeling IF analyses, you must upload the images for each filter that was used to take the image. Do not take any action for those filters that do not have available images.

1. Strain A, Treatment A, 100 ng/mL, 30 C

Red filter:

ADD IMAGE(S)

4X, 20X

☐

Blue filter:

ADD IMAGE(S)

4X, 20X

Green filter:

ADD IMAGE(S)

4X, 20X

All filters:

ADD IMAGE(S)

4X, 20X

For antibody-labeling IF analyses, the instructor will need to upload images for each filter.

This list of samples continues for all of the samples with this treatment combination, then the next treatment combination, if applicable, will follow.

This is what the pop up window to select an image will look like:

A. Dye/Stain, Dye/Stain Name

Sample Name

PREVIOUS

NEXT

X

SELECT IMAGE(S):

This connects to the user's operating system and the user can navigate to find the image(s) that he/she would like to select.

The user can select multiple images by using the "control" button on a PC or the "command" button on a Mac.

We like the idea of either selecting an image from the desktop or from an image library. If we have an image repository, then we could have a way to add an image directly uploaded from the computer to be added into the repository.

The image repository would consist of a little thumbnail and the name of the image.

The image repository is likely an advanced functionality that will be built later.

SAVE

Analyze

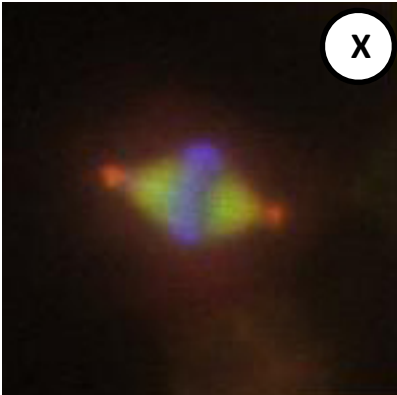
3. Select the image(s) associated with each sample and its corresponding microscopy analysis and conditions.

Note: We recommend that images are at least 500x500 pixels for optimal viewing in StarCellBio and that images for a particular microscopy analysis are obtained using the same objective.

A. Dye/Stain, Dye/Stain Name

Sample

1. Strain A, Treatment A, 100 ng/mL, 30 C ADD MORE



Objective:

20X

2. Strain A, Treatment A, 100 ng/mL, 37 C ADD MORE

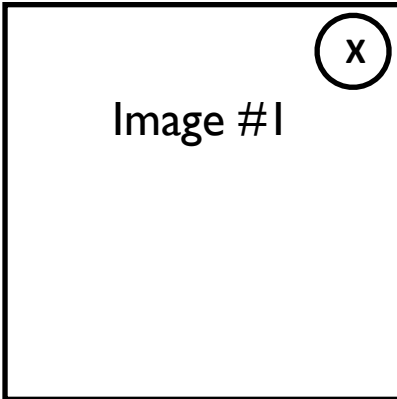


Image #1

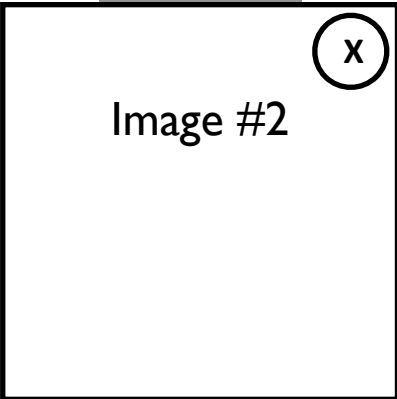


Image #2

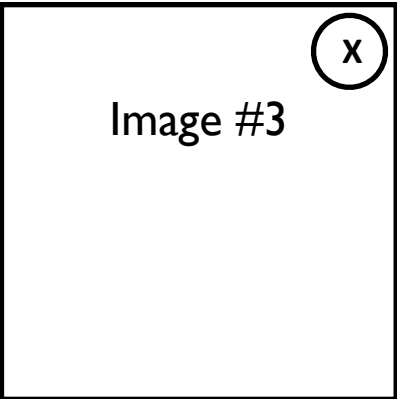


Image #3

Objective:

20X

20X

20X

3. Strain A, Treatment B, 200 ng/mL, 30 C

ADD IMAGE(S)

BACK

Copy to other sample(s)



Notes:

If the instructor has selected many images for a particular sample, then we will need to show a thumbnail of each one - either in rows/columns or by creating pagination system to scroll through the images.

The instructor can delete an image by selecting the “x” in the upper right hand corner. If the instructor deletes all of the images, then the original “Add image(s)” button will appear.



The ‘copy to other sample(s)’ button doesn’t work for a sample until an image is selected for a sample.

If the instructor selects “copy to other samples” then a pop up window appears and the instructor can check the names of other samples to which a histogram should be applied. See the next page for what the pop up will look like if the instructor selects the “copy to other sample(s)” checkbox.



SAVE AND CONTINUE

Analyze

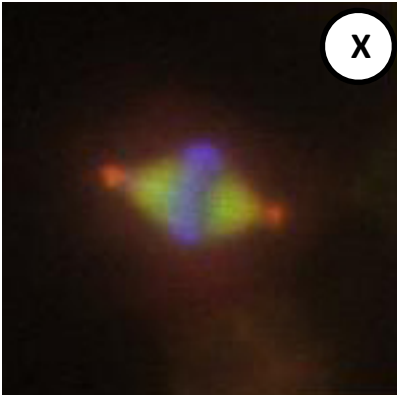
3. Select the image(s) associated with each sample and its corresponding microscopy analysis and conditions.

Note: We recommend that images are at least 500x500 pixels for optimal viewing in StarCellBio and that images for a particular microscopy analysis are obtained using the same objective.

A. Dye/Stain, Dye/Stain Name

Sample

1. Strain A, Treatment A, 100 ng/mL, 30 C ADD MORE



Objective:

20X

2. Strain A, Treatment A, 100 ng/mL, 37 C ADD MORE

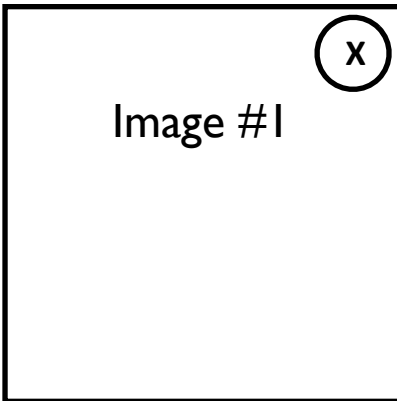


Image #1

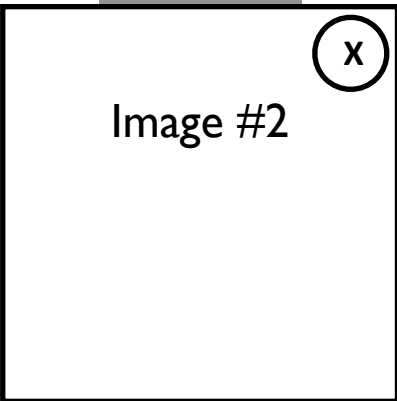


Image #2

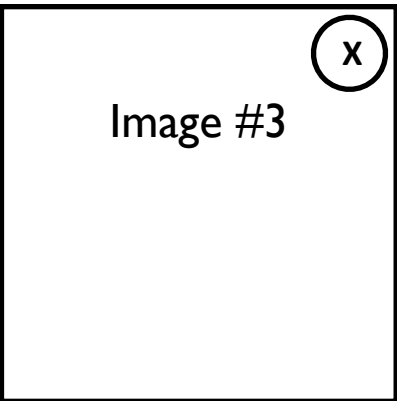


Image #3

Objective:

20X

20X

20X

3. Strain A, Treatment B, 200 ng/mL, 30 C

ADD IMAGE(S)

BACK

Copy to other sample(s)

Copy to:

X

- ☐ 1. Strain A, Treatment A, 100 ng/mL, 30 C
- ☐ 2. Strain A, Treatment A, 100 ng/mL, 37 C
- ☒ 3. Strain A, Treatment B, 200 ng/mL, 30 C
- ☒ 4. Strain A, Treatment B, 200 ng/mL, 37 C
- ☐ 5. Strain B, Treatment A, 100 ng/mL, 30 C
- ☐ 6. Strain B, Treatment A, 100 ng/mL, 37 C

OK

X

Notes:

☐

If the instructor has selected many images for a particular sample, then we will need to show a thumbnail of each one - either in rows/columns or by creating pagination system to scroll through the images.

The instructor can delete an image by selecting the “x” in the upper right hand corner. If the instructor deletes all of the images, then the original “Add image(s)” button will appear.

☐

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SAVE AND CONTINUE