MICROSCOPY

Sample Prep

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

Analysis	Conditions	
Dye/Stain	Dye/Stain Name	
Antibody-labeling IF	Antibody Name	x
Antibody-labeling IHC	Antibody 1	x
Antibody-labeling IHC	Antibody 2	x
Brightfield	---	x
Select Analysis	*Conditions*	x

ADD

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”.

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2. Define which of the following analyses and conditions are available for each of your samples.

Sample	Available?	Analysis Type	Conditions
1. Strain A, Treatment A, 100 ng/mL, 30 C	X	Dye/Stain	Dye/Stain Name
	X	Antibody-labeling IF	Antibody Name
	X	Antibody-labeling IHC	Antibody 1
	X	Antibody-labeling IHC	Antibody 2
	X	Brightfield	
2. Strain A, Treatment A, 100 ng/mL, 37 C	X	Dye/Stain	Dye/Stain Name
	X	Antibody-labeling IF	Antibody Name
	X	Antibody-labeling IHC	Antibody 1
	X	Antibody-labeling IHC	Antibody 2
	X	Brightfield	
3. Strain A, Treatment B, 200 ng/mL, 30 C	X	Dye/Stain	Dye/Stain Name
	X	Antibody-labeling IF	Antibody Name
	X	Antibody-labeling IHC	Antibody 1
	X	Antibody-labeling IHC	Antibody 2
	X	Brightfield	
4. Strain A, Treatment B, 200 ng/mL, 37 C	X	Dye/Stain	Dye/Stain Name
	X	Antibody-labeling IF	Antibody Name
	X	Antibody-labeling IHC	Antibody 1
	X	Antibody-labeling IHC	Antibody 2
	X	Brightfield	
5. Strain B, Treatment A, 100 ng/mL, 30 C	X	Dye/Stain	Dye/Stain Name
	X	Antibody-labeling IF	Antibody Name
	X	Antibody-labeling IHC	Antibody 1
	X	Antibody-labeling IHC	Antibody 2
	X	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

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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	☐
2. Strain A, Treatment A, 100 ng/mL, 37 C ADD IMAGE(S)	4X, 20X	☐
3. Strain A, Treatment B, 200 ng/mL, 30 C ADD IMAGE(S)	4X, 20X	☐
4. Strain A, Treatment B, 200 ng/mL, 37 C ADD IMAGE(S)	4X, 20X	☐
5. Strain B, 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.

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.

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.

B. Antibody-labeling IF, Antibody Name

Note: For antibody-labeling IF analyses, you must upload the images by the filter that was used to take the image. If images for a particular filter are unavailable, then don’t upload images.

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

		Objective	Copy to other sample(s)
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	

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

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

A. Dye/Stain, Dye/Stain Name

X

Sample Name PREVIOUS NEXT

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

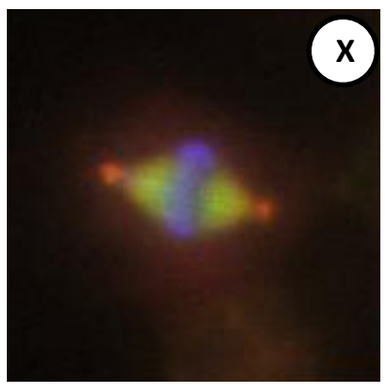
3. Select the image(s) associated with each sample and its corresponding microscopy analysis and conditions.
Note: We recommend that images are at least 500x500 pixels for optimal viewing in StarCellBio and that images for a particular microscopy analysis are obtained using the same objective.

Objective option 1

A. Dye/Stain, Dye/Stain Name

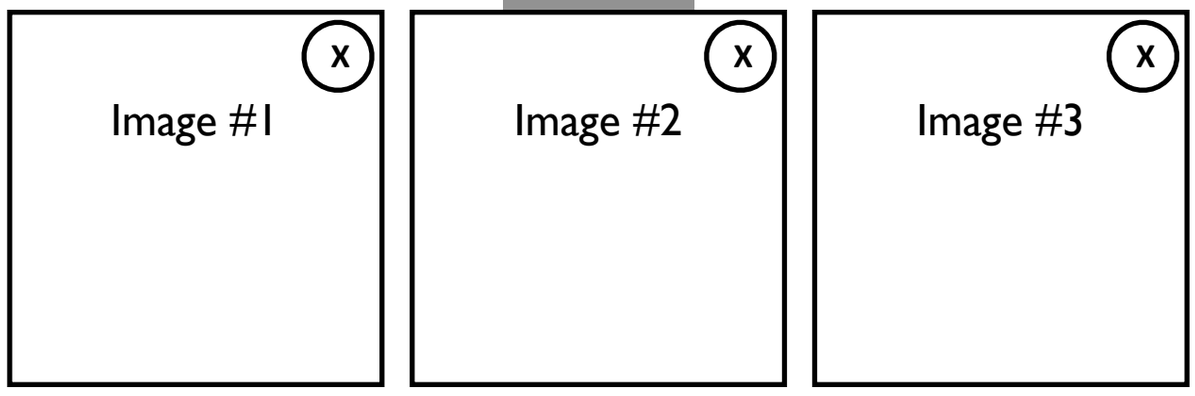
Sample

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**



Objective: 20X | 20X | 20X

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

ADD IMAGE(S)

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.

☐

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SAVE AND CONTINUE

Analyze

3. Select the image(s) associated with each sample and its corresponding microscopy analysis and conditions.
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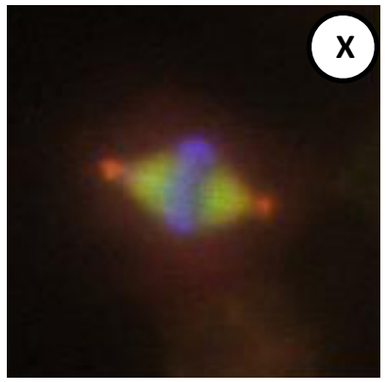
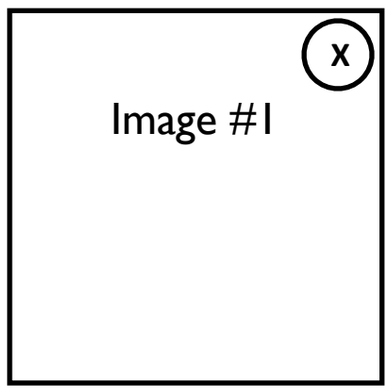
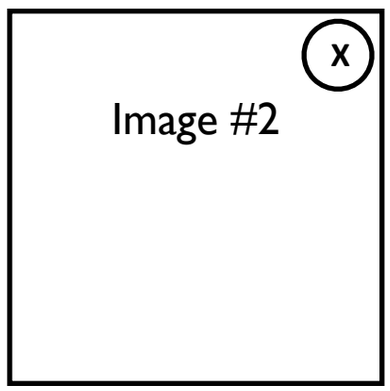
Objective option 2

A. Dye/Stain, Dye/Stain Name

Sample	Objective	Copy to other sample(s)
1. Strain A, Treatment A, 100 ng/mL, 30 C ADD MORE	20X	X
2. Strain A, Treatment A, 100 ng/mL, 37 C ADD MORE	20X	
3. Strain A, Treatment B, 200 ng/mL, 30 C	20X	
	4X, 20X	







BACK ADD IMAGE(S) SAVE AND CONTINUE

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.

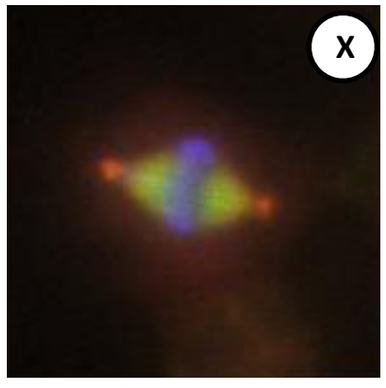
Analyze

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

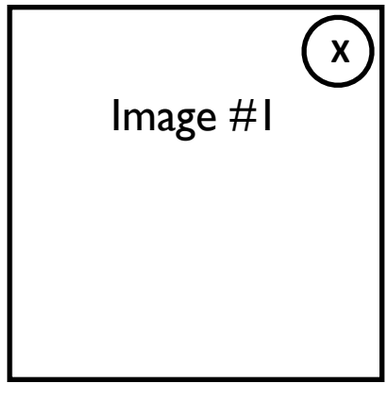
Sample

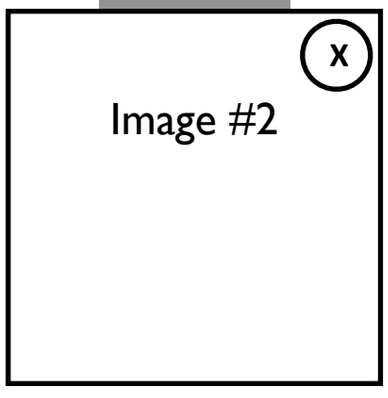
1. Strain A, Treatment A, 100 ng/mL, 30 C **ADD MORE**

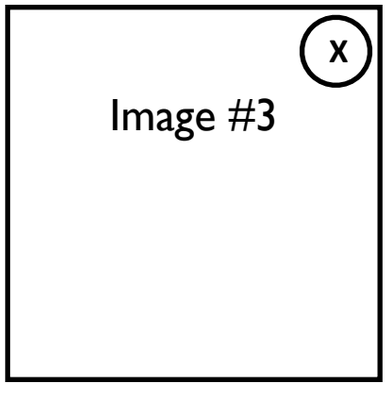


Objective: 20X

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







Objective: 20X 20X 20X

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

ADD IMAGE(S)

Copy to other sample(s)

Copy to:

- [ ] 1. Strain A, Treatment A, 100 ng/mL, 30 C
- [ ] 2. Strain A, Treatment A, 100 ng/mL, 37 C
- [x] 3. Strain A, Treatment B, 200 ng/mL, 30 C
- [x] 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

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.

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.

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