

## A. EXPERIMENTAL SETUP

- ☒ Create new experimental setup
- ☐ Copy and edit an existing experimental setup

Notes: The instructor will first choose whether he/she would like to create an entirely new setup or use a pre-existing one (either one from his/her account or a freely available exercise) as a template. If the second choice is selected, then he/she will have drop down menu of options from which he/she can select the name of an exercise. All of the fields below will auto-populate, with the option to edit.

1. Which experimental setup variables are in your experimental setup?

- ☒ Strains
- ☒ Treatments
- ☒ Treatment Concentration
- ☒ Temperature
- ☐ Treatment Start Time
- ☐ Treatment Duration
- ☐ Collection Time

Notes: The instructor will input the experimental variables that apply to his/her experiment setup

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2. In this question, you will define the number of each variable that is relevant in your experiment setup.

a) How many strains do you have?

3

b) How many different treatments and treatment concentrations do you have?

i. How many different treatments do you have?

2

ii. How many different concentrations do you have for Treatment 1?

1

iii. How many different concentrations do you have for Treatment 2?

1

c) How many different temperatures do you have?

2

Notes: text box entry must be a number for question 2 a-d.  
The choices for part c will appear after the instructor inputs the number of treatments.

If an instructor only selects treatments or treatment concentrations in question 1, then the question in part b will be updated appropriately to only ask him/her to define the necessary variables.

Another option is to skip question 2 and go straight to question 3. The default would then be that one row appears after each question and the add row button would be really necessary in that case.

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3. In this question, you will further define and name each of the variables in your experiment setup.

a) Enter the name of each of your strains.

1	<input type="text" value="Strain A"/>	x
2	<input type="text" value="Strain B"/>	x
3	<input type="text" value="Strain C"/>	x

Add Row

b) Define your treatments and treatment concentrations.

	Treatment Name	Treatment Concentration	Treatment Concentration Units	
1	<input type="text" value="Treatment 1"/>	<input type="text" value="Concentration"/>	<input type="text" value="Units"/>	x
2	<input type="text" value="Treatment 2"/>	<input type="text" value="Concentration"/>	<input type="text" value="Units"/>	x

Add Row

c) Enter each of your temperatures. Don't forget to include the appropriate units.

Temperature	Temperature Units	
<input type="text" value="Temperature"/>	<input type="text" value="Units"/>	x
<input type="text" value="Temperature"/>	<input type="text" value="Units"/>	x

Add Row

Notes: We can have “Add Row” and delete buttons here so the instructor doesn’t have to go back to question 2 to edit the numbers of each variable. These are optional though and are not necessarily needed here in Question 3.

Notes: For parts b and c, the concentration and temperature units will be a separate pre-populated drop down menu of options. The drop down menu will contain many options with Greek Letters. There will also be an option to add a new unit, although it is likely that the instructor won’t be able to add units with greek letters unless by request.

4. Below is your experimental setup so far. Please review the setup. In this table, you can delete row(s) and sort each row into descending/ascending order. If you would like to change the number and /or names of each of your experimental variables, go back to edit the setup.

ADD SAMPLES

	Strain	Treatment	Treatment Concentration	Temperature	Delete?
<input type="checkbox"/>	Strain A	Treatment A	100 ng/mL	30 C	X
<input type="checkbox"/>	Strain A	Treatment A	100 ng/mL	37 C	X
<input type="checkbox"/>	Strain A	Treatment B	200 ng/mL	30 C	X
<input type="checkbox"/>	Strain A	Treatment B	200 ng/mL	37 C	X
<input type="checkbox"/>	Strain B	Treatment A	100 ng/mL	30 C	X
<input type="checkbox"/>	Strain B	Treatment A	100 ng/mL	37 C	X
<input type="checkbox"/>	Strain B	Treatment B	200 ng/mL	30 C	X
<input type="checkbox"/>	Strain B	Treatment B	200 ng/mL	37 C	X
<input type="checkbox"/>	Strain C	Treatment A	100 ng/mL	30 C	X
<input type="checkbox"/>	Strain C	Treatment A	100 ng/mL	37 C	X
<input type="checkbox"/>	Strain C	Treatment B	200 ng/mL	30 C	X
<input type="checkbox"/>	Strain C	Treatment B	200 ng/mL	37 C	X

All of the possible combinations of the variables (in the preceding questions) will be presented to the instructor. The instructor can delete row(s). In addition, each column can have the ability to sort based on ascending/descending order.

This table may or may not be formatted as the Add Samples window (as currently shown). If we format it like the Add Samples window, then it may not appear to be editable, which it is. The instructor will see a preview of the Add Samples window later and will be asked to confirm the experimental setup at that time.

More Advanced possibilities to consider:  
1. Instead of going back to edit the setup, the instructor could do a quick edit of the setup here. The values would need to appear as text boxes.

2. This information could be displayed as the “Add Samples’ window in StarCellBio so the instructor can see what it will look like. Or a “Preview” button can be available. This may not be necessary though since they will see a preview of it later.

3. The instructor could be able to re-arrange the order of the rows and/or columns here into the desired position. We will need to check whether this functionality will work with the current StarCellBio programming.

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5. Would you like to group your experimental setup by one of your variables in the “Add Samples” window in StarCellBio?

☒ Yes

☐ No

If yes, which one?

☒ Strains

☐ Treatments

☐ Treatment Concentration

☐ Temperature

If the instructor selects yes, then the next question appears. Based on the selection, the new re-grouped “Add Samples” window should appear on the next screen. The instructor will need to “ok” the information before continuing.

If the instructor selects no, then a preview of the experiment setup in the Add Samples window will still appear on the next page and the instructor will need to confirm it before continuing.

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6. Please confirm your experimental setup before continuing:

**ADD SAMPLES**

**Strain A:**

	Treatment	Treatment Concentration	Temperature
<input type="checkbox"/>	Treatment A	100 ng/mL	30 C
<input type="checkbox"/>	Treatment A	100 ng/mL	37 C
<input type="checkbox"/>	Treatment B	200 ng/mL	30 C
<input type="checkbox"/>	Treatment B	200 ng/mL	37 C

**Strain B:**

<input type="checkbox"/>	Treatment A	100 ng/mL	30 C
<input type="checkbox"/>	Treatment A	100 ng/mL	37 C
<input type="checkbox"/>	Treatment B	200 ng/mL	30 C
<input type="checkbox"/>	Treatment B	200 ng/mL	37 C

**Strain C:**

<input type="checkbox"/>	Treatment A	100 ng/mL	30 C
<input type="checkbox"/>	Treatment A	100 ng/mL	37 C
<input type="checkbox"/>	Treatment B	200 ng/mL	30 C
<input type="checkbox"/>	Treatment B	200 ng/mL	37 C

Notes: This page will provide a preview of exactly how the experiment setup will appear in the “Add Samples” window in StarCellBio.

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Confirm Experimental Setup