

Ice nucleation assay

Group number: _____

Objective: _____

Hypothesis: _____

Experiment design

Droplet size: _____

Replicates: _____

Control: _____

Samples

Sample Number	Sample Name	Description
Control	Sterile deionized water	
	Sample collected from outside	
1	Tap water	
2	Mineral water	
3	Feldspar	Inorganic, igneous rock, mineral
4	Montmorillonite	Inorganic, clay
5	<i>P. syringae</i> strain 1	Bacteria
6	<i>P. syringae</i> strain 2	Bacteria
7	Snomax®	Inert bacteria
8	Fennell pollen	Pollen
9	Bee pollen	Pollen
10	Button mushroom spores	Fungus

Choose 3 samples from numbers 1-10 above, plus control, plus outdoor sample for a total of 5 samples.

Go outside and pick a sample you think might be a good ice nucleator (examples: water, soil, leaves, etc.). Place the sample in the 50 mL tube with an orange cap provided to your group.

What was your outdoor sample description including location? _____

Place the droplets on the Parafilm boat with the bath at -2° C. Set the bath to -12° C and watch for freezing as the temperature changes. As the drops freeze the color will change becoming less yellow.

Results:

Record if each sample froze or not, and if it froze, at what temperature.

Sample	Replicate 1	Replicate 2	Replicate 3
Example: 4	Froze @ -8° C	Froze @ -9° C	Not frozen @ -12°C
Control			
Outdoor sample			

What can you conclude? _____

What are the limitations of this design? _____

What could be improved in the future? _____