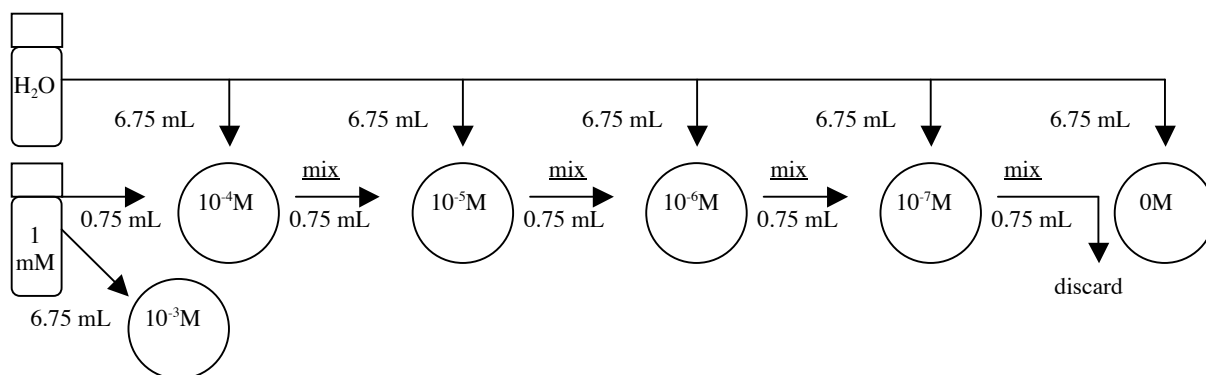


# Seed Germination

The basic idea of this project is to study the germination of lettuce (*Lactuca sativa*). Petri dishes are used as a chamber for seed germination. The bottom should be lined with a single disc of filter paper moistened with 5-7 mL of some test solution. A group of 50 seeds should be sprinkled over this paper. There are white, red, far-red light sources and/or filters. Foil is available to wrap dishes to keep them in the dark. Can gibberellic acid overcome the effect of darkness or far-red light? A 1 mM GA solution and distilled water are available for serial dilutions.



Seeds inside fleshy fruits, such as tomato, do not sprout inside the fruit, in spite of being in light, moisture, and warmth. How does the juice of the fruit inhibit seed germination? Could it be the pH of the juice? Could it be the osmolarity? Could it be the presence of an inhibitory compound, such as abscisic acid? Available solutions in the laboratory include: tomato juice, 1 mM AbA, 1 M Sucrose and the components to make buffers (citric acid and phosphate):

pH	mL 0.01 M Citric Acid	mL 0.02 M $K_2HPO_4$
3.0	4.0	1.0
4.0	3.1	1.9
5.0	2.4	2.6
6.0	1.8	3.2
7.0	0.9	4.1
8.0	0.1	4.9

Sucrose (M)	mL 1 M Sucrose Stock	mL distilled water
1.0	5.0	0
0.9	4.5	0.5
0.8	4.0	1.0
0.7	3.5	1.5
0.6	3.0	2.0
0.5	2.5	2.5
0.4	2.0	3.0
0.3	1.5	3.5
0.2	1.0	4.0
0.1	0.5	4.5
0.0	0	5.0