



Testing the Effect of Ultraviolet Light on Bacteria Growth

We will test how different amounts of ultraviolet (UV) light affect the growth of bacteria.

QUESTION

How does the amount of ultraviolet (UV) light exposure affect the growth of bacteria?

HYPOTHESIS

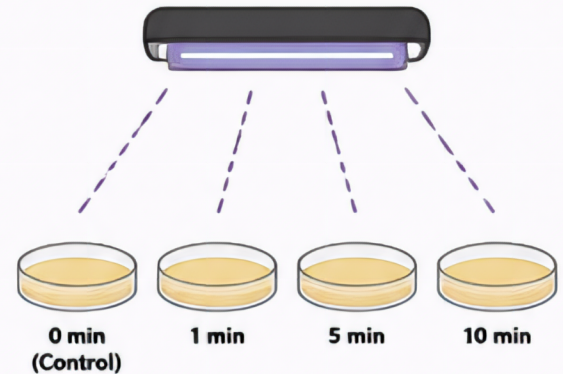
If bacteria are exposed to more ultraviolet (UV) light, then _____
because _____
_____.

MATERIALS

- UV light source (UV lamp or sterilizing box)
- 4 sterile Petri plates with nutrient agar
- Bacteria source (swab from a clean surface or previously prepared culture)
- Sterile cotton swabs
- Timer or clock
- Aluminum foil or opaque cover
- Marker
- Incubator or warm location (20–37 °C / 68–98 °F)

EXPERIMENT PROCEDURE

1. Label 4 Petri plates on the bottom: 0 min (Control), 1 min, 5 min, 10 min.
2. Using a sterile swab, gently spread the bacteria evenly on the surface of all 4 plates.
3. For the 0 min (Control) plate: do NOT expose to UV light. Cover it with foil.
4. Expose the other plates to UV light for the times listed on their labels:
 - 1 min plate → expose for 1 minute
 - 5 min plate → expose for 5 minutes
 - 10 min plate → expose for 10 minutes(Keep plates uncovered while exposed. Keep the distance from the UV light the same for all.)
5. After exposure, cover all plates.
6. Incubate all plates upside down in a warm place for 24–48 hours.
7. Observe and record the number of bacterial colonies on each plate.



DATA TABLE

UV Exposure Time	0 min (Control)	1 min	5 min	10 min
Number of Bacterial Colonies (Count)				
Observations (Colony size, density, etc.)				

ANALYSIS & CONCLUSION

1. What happened to the number of bacterial colonies as UV exposure time increased? _____

2. What does this tell you about the effect of ultraviolet light on bacteria? _____

3. How could this information be used in real life? _____
