Lab Procedure Overview:

Everybody will be assigned a number and each number will correspond to a particular culture and UV exposure time. Each person will inoculate a nutrient agar plate with their assigned culture and will keep their media plate open. An index card will be placed onto one half of the plate and the plate will be placed under UV light for the assigned amount of time (see figure 1). After UV exposure the plate will be closed and incubated for 24 hours at 37°C.

Protocol

Materials per group of 4

1 timer

1 permanent marker

1 UV light source

1 nutrient agar (NA) plate

1 Nutrient broth culture of Staphylococcus epidermis or Bacillus megaterium with swabs.

1 Index card

				Exposure				
				Times				
S. epidermis	1	2	3	4	5	6	7	8
	10 sec	20 sec	40 sec	80 sec	2.5 min	5 min	10 min	10 min*
B. megaterium	9	10	11	12	13	14	15	16
	1 min	2 min	4 min	8 min	15 min	30 min	60min	60 min*

Table 1 Student Inoculation Assignments

Table 1.

1. Use Table 1 to determine your culture and exposure time. Get your supplies.

2. Label your plate: initials, culture, exposure time and date.

3. Dip the swab in your assigned culture. Use the swab to smear the culture all over the entire plate (see figure 2).

4. Keep the Petri dish open and place an index card on half of the exposed agar. Place the plate under a UV light (in the hood) and leave it there for

the assigned amount of time. WARNING: Do not look directly into the UV light as it can cause damage to your eyes. Do not expose your direct skin to the UV either. Wear gloves.

5. Remove the plate from the UV, remove the card, and cover the plate with the Petri dish lid.

6. Incubate at 37 degrees C (upside down) for 24 hours.

Top View

Figure 2. Swab the culture in all directions on the agar.

Created by Michelle Furlong

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Day two instructions.

Observe your exposure plate. Determine which side of the plate was exposed to UV light.
Count the colonies on the side of the plate that was exposed to UV and record the number in the data table.

3. Record the data from the rest of the class.