

## CATALASE TEST

Catalase is the enzyme that breaks hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) into  $\text{H}_2\text{O}$  and  $\text{O}_2$ . Hydrogen peroxide is often used as a topical disinfectant in wounds, and the bubbling that is seen is due to the evolution of  $\text{O}_2$  gas.  $\text{H}_2\text{O}_2$  is a potent oxidizing agent that can wreak havoc in a cell; because of this, any cell that uses  $\text{O}_2$  or can live in the presence of  $\text{O}_2$  must have a way to get rid of the peroxide. One of those ways is to make catalase.

### PROCEDURE

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- a. Place a small amount of growth from your culture onto a clean microscope slide. If using colonies from a blood agar plate, be very careful not to scrape up any of the blood agar—blood cells are catalase positive and any contaminating agar could give a false positive.
  - b. Add a few drops of  $\text{H}_2\text{O}_2$  onto the smear. If needed, mix with a toothpick. DO NOT use a metal loop or needle with  $\text{H}_2\text{O}_2$ ; it will give a false positive and degrade the metal.
  - c. A positive result is the rapid evolution of  $\text{O}_2$  as evidenced by bubbling.
  - d. A negative result is no bubbles or only a few scattered bubbles.
  - e. Dispose of your slide in the biohazard glass disposal container. Dispose of any toothpicks in the Pipet Keeper.
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