MAKING “BIOTECH” FOOD

***Please note that this is the quick and “non-sterile” approach. DO NOT consume these items here at school or make them at home due to contamination concerns.

**Cheese**

1. Add 1 mL of skim milk to a 1.5 mL tube.
2. Add 0.5 mL of chymosin to the same 1.5 mL tube.
3. Cap the tube and gently shake.
4. Hold in your hand for about 15 minutes. Has the milk solidified?

**Root Beer**

1. Use a funnel to fill the bottle to just below the neck with a warm sugar solution (about 1/8 cup sugar in 250 mL water).
2. Add 1/4 teaspoon yeast to the same bottle.
3. Screw the bottle cap on tightly and try to mix the sugar in completely.
4. Label bottle with your initials and store it in the 37°C incubator until class tomorrow.

**Yogurt**

1. Add 150 mL of skim milk to a 250 mL beaker.
2. Add 1-2 teaspoons of yogurt to the same beaker. Record the name of the organism (“Live active culture highlighted in “pink” on the side of the container) in the space below.
3. Mix by stirring.
4. Measure pH with pH paper and record observations below for Day One.
5. Cover with aluminum foil and label with your initials.
6. Store the beaker in the 37°C incubator until class tomorrow.
7. On Day Two, measure pH again and record observations.

Name of organism - _______________________

pH Day One - ______

pH Day Two - ______
MAKING BIOTECH FOOD LAB RESULTS

Cheese

1. What active ingredient was once part of a living organism?
2. What evidence did you have that a chemical reaction took place?
3. Was this an example of the work of enzymes or cellular respiration?
4. What experiment could you set up to show that the rennin was catalyzing a reaction?

Root Beer

1. What active ingredient was a living organism?
2. What evidence do you have that a chemical reaction took place?
3. Was this an example of the work of enzymes or cellular respiration?
4. What gas is inside the bottle and how did we test for it?

Yogurt

1. What active ingredient was a living organism?
2. What evidence do you have that a chemical reaction took place?
3. Was this an example of the work of enzymes or cellular respiration? If cellular respiration, which type and what is your evidence?
4. The “live active culture” in the yogurt is *Lactobacillus acidophilus*. What does this name mean in Latin? Why is this organism appropriately named?
5. THINK – Bacteria cannot perform aerobic respiration. What does this tell you about the difference between bacterial cells and our cells in terms of organelles (cell parts like nucleus, lysosome, etc.)?