## Project Title

The Effects of Various Amylase Enzymes on the Starch Hydrolysis

### Objectives/Goals

The objective of this experiment is to compare the effects of human salivary amylase enzymes versus microbial enzymes on starch hydrolysis.

### Methods/Materials

Subcultures of Bacillus subtilis, Streptoccous agalatae, Sacchromyces cerevisiae, and human saliva were inoculated to the appropriately labeled quadrants on the starch agar plate. The starch agar plate was left at room temperature for 24 hours at 37 degrees Celsius and pH of 7.0. Iodine solution was then flooded on the starch agar plate. The diameters of the starch hydrolysis for S. agalatae, B. subtilis, saliva, and S. cerevisiae were measured in mm. every ten minutes for two hours. The data was then tabulated and graphed. Procedure was repeated for two more trials.

### Results

The largest diameter of the clear zone (starch hydrolysis) was found in salivary amylase, 9.7 mm., followed by Bacillus subtilis, 4.4 mm., and 0 mm. for both Streptoccous agalatae (negative control) and Sacchromyces cerevisiae.

### Conclusions/Discussion

Human salivary enzymes were more effective in starch hydrolysis than microbial amylase enzymes.

### Summary Statement

Effects of various amylase enzymes on starch hydrolysis are being observed.

### Help Received

- Mr. Mekemson provided necessary information.
- Dave Mohlenhoff, lab director and May Padiernis-Bognh, microbiologist, donated starch agars and privileged me to use microbiology facility at J.F.K. hospital.
- Dr. Jolene Abraham, pathologist, developed gram stain photos of bacteria.