

Effects of Animal Blood Agar on Plate Hemolysis and Morphology

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Introduction

In clinical and research-based microbiology laboratories, sheep blood agar has been the gold standard of agar choice for its reliability to show key characteristics such as hemolysis and proper colony quantities. In this project, testing was performed to contrast sheep blood agar against other various animal blood plates such as horse, rabbit and bovine. Tryptic soy agar was mixed with five percent defibrinated blood from the various animals that were selected.

Bacteria tested:

- *Streptococcus pyogenes*
- *Escherichia coli*
- *Streptococcus pneumoniae*
- *Coagulase negative Staphylococcus aureus*



Figure 1 Preparing the agar



Figure 2 Poured agar

Results

Throughout the duration of this experiment, sheep blood derived agar grew colonies that showed characteristic traits of the bacteria. Agar plates made from horse and bovine provided a relatively stable environment that allowed for optimal growth; however, *Streptococcus pneumoniae* had varying levels of hemolysis and colony color throughout the four inoculating stages of the experiment. Rabbit blood agar had the most variability in regards to growth. Rabbit blood was prone to have various colony color change as well as reoccurring contamination throughout the experiment. Bovine had similar issues with colony color but did not become contaminated. The plates made of horse and sheep blood had identical results and were considered reliable because they were showing definitive characteristics of the varying organisms.

Methods

- Tryptic soy agar was mixed with five percent defibrinated blood from the various animals that were selected.
- These plates were made and inoculated with each of the organisms.
- The data was then recorded, and the process was repeated three more times.

Organisms used from top to bottom

- *S. pyogenes*- selected for Beta hemolysis
- *E. coli*- selected for frequency in infections
- *S. pneumoniae*- selected for alpha hemolysis
- Coag Neg Staph-selected for gamma hemolysis

SBA Horse Rabbit Bovine

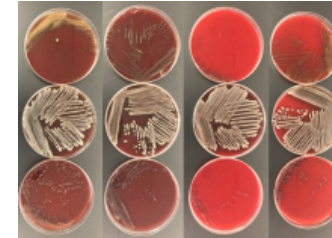


Figure 3 Group 1

SBA Horse Rabbit Bovine

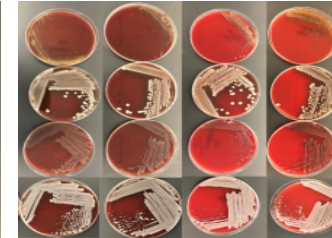


Figure 4 Group 2

SBA Horse Rabbit Bovine

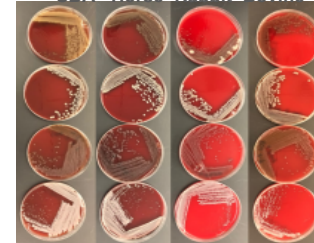


Figure 5 Group 3

SBA Horse Rabbit Bovine

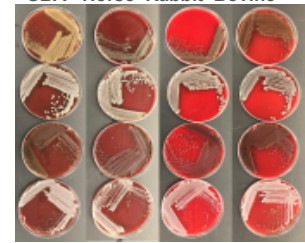


Figure 6 Group 4