Optimizing the Ratios of Manuka Honey to Adhesive in an Antibacterial Surgical Adhesive

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The purpose of this science project was to optimize the ratios of Manuka honey solution to adhesive in an antibacterial surgical adhesive. Specifically, the different ratios were investigated to determine how they affected the strength of the adhesive and the bacterial growth on stimulated wounds sealed with the adhesive. To determine how the differing ratios affected the amount of bacteria on the simulated wounds, slits were cut in pieces of meat, on which the different formulations of the adhesives were applied, and swabs were taken a day after the adhesive was applied. There was a linear decline of bacteria on the wound as the Manuka honey solution in the ratio increased, while the adhesive strength differed depending on the percentage of honey solution added.

Awards Won:

Second Award of $2,000