Regeneration Rates of Dugesia japonica Using Glucose Oxidase Enhanced Honey

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The purpose of this investigation is to determine the effects of glucose oxidase enzyme enhanced honey as a topical wound healing accelerator. The antibiotic treatment will be applied to bisected Dugesia japonica and assessed for improved regeneration rates. For experimentation in this investigation, 15 Dugesia japonica were obtained, and each individual organism was put into a 100 mL beaker (1-15) filled prior with distilled water. Planaria 1-5 were treated with enzyme enhanced honey, planaria 6-10 were used as the control (not treated at all), and planaria 11-15 were treated with pure honey (which was used as a standard). Following this, amounts needed for each component of glucose oxidase enzyme enhanced honey (raw honey, glucose oxidase enzyme, and sterile water) were calculated, and mixed together. Next, petri dishes were filled with sterile water and frozen to create a surface for bisecting. One at a time, each planaria were bisected horizontally, and then treated with the respected variables. For 7 days, the planaria were observed, and the lengths of regeneration were recorded in millimeters. With a majority of these tests showing statistical significance, it is very possible that glucose oxidase enzyme enhanced honey could be used as a wound healing accelerator. I am able to fully accept my hypothesis, for the enzyme enhanced honey did increase the regeneration rates of bisected Dugesia japonica when compared to no treatment method (control) as well as when compared to the treatment method of pure honey.

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