The Effects of Various Inhibitors on the Dermatophyte, Trichophyton rubrum

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The purpose of this experiment was to determine the most effective remedy in treating the dermatophyte Trichophyton rubrum through analysis of the zones of inhibition. Inhibitors used were: 1% oxiconozole nitrate Oxistat (prescription medication), 1% butenafine hydrochloride Lotrimin Ultra (over the counter medication), and Allium stativum (garlic-herbal). The researcher hypothesized that Oxistat would have the highest success rate. The null hypothesis projected that the method and concentration would have no effect on treatment. Twenty-four Mycosel Agar pathogen-culturing plates, measuring 3 inches in diameter, were swabbed with T. rubrum cells. Six plates were left untreated (Control group). Approximately 0.25 mililit of each experimental inhibitor was placed at the center of six dishes per inhibitor. After 30 days, the zones of inhibition were measured in centimeters, 4 cm representing the ideal zone of inhibition. The Allium stativum had the highest rate of success with an average zone of inhibition of 3.85 cm. The garlic remained relatively consistent, with the exception of a suspected outlier in Trial 1. The second most effective inhibitor was the Lotrimin Ultra with an average zone of 3.3 cm. However, the Lotrimin Ultra had the greatest amount of variability between trials. The Oxistat proved least effective with an average zone of 3.1 cm; however, Oxistat had the least variability and remained most consistent. T-tests were conducted at 10 Degrees of Freedom comparing the inhibitors to the control, which show that the null hypothesis can be rejected. T-tests were conducted at 10 Degrees of Freedom comparing inhibitor to inhibitor. The results indicate that the garlic is statistically more effective than Oxistat.