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*The Chemiluminescence of Bleaches Induced by Luminol: A Study of Glows Over Periods of Time*

The aim of this study was to investigate the interaction of the luminol solution with the most commonly used household cleaners - bleaches. I posed a hypothesis that the intensity of the glows depends on the concentration of sodium hypochlorite (NaClO) in a given bleaching agent. I also wanted to know which of these cleaning agents (while catalyzing the oxidation of luminol) give the luminescence answer closest to the reaction occurring between luminol and blood, which (for ethical reasons) was prepared by mixing dried hemoglobin with water. The substances (bleaches and the blood imitation) were tested in a triplicate, where each well contained 125 microliters of a given fluid. To investigate the influence of time on the samples, 95 microliters of luminol was added to the wells containing the fluids after one hour, two days and four days. After getting the results in relative luminescence units, the average for each group was taken. I found that there is not a significant correlation between the concentration of sodium hypochlorite and the intensity of the glow. However, the chemiluminescence changes in time; in the samples, which were measured after two and four days, the glow was very different than in the samples from the first day of the experiment. My research also answered the most significant question in the study - the bleach containing the highest concentration of sodium hypochlorite gave the answer closest to the one given by the reaction of blood with luminol.