KINETIC CHARACTERIZATION OF LACASE PRESENT IN A CRUDE PREPARATION PRODUCED BY *Trametes hirsuta* BM2

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Introduction. The textile industry has two-thirds of the total market of coloring and consuming large volumes of water and chemical products for the textile wet processing. Chemical reagents used are very different in their chemical composition. Due to the chemical structure of dyes effluent from textile industry are resistant to fading from exposure to light, water and various chemicals. The resolution of this problem, considered physical and chemical processes in the treatment of effluents, however, the results have been unsatisfactory. In recent decades has been the use of the enzyme laccase for bleaching textiles and even for synthesizing dyes, this enzyme is a phenol oxidase, whose efficiency is increased with the use of mediators such as acid 2, 2'-azino-bis-(3-etilbenzotiazolina-6-sulfonic acid) (ABTS) longer than its molecular size, lets you spread more rapidly toward the active center of the enzyme and the other to the right value of redox potential of the mediator. These characteristics favour the reaction rate and increase the variety of substrates on which act can enzima-mediador system. For this reason the objective of this study was to conduct kinetic characterization of the enzymatic extract rich in lacasas produced by Trametes hirsuta BM2 in a system of submerged fermentation using a culture medium with wheat bran.

Methods. Use the strain of Trametes hirsuta BM2 isolated by our working group to produce a lacasas-rich crude enzyme filter using a culture medium containing wheat bran at 3% w/v which was inoculated with and 2 ml of homogenized mycelium and subsequently incubated at 35 ° C and 150 rpm for 10 days. Cultures were leaked in filter paper type Whatman No.1. Enzymatic filtering retrieved, was centrifuged at 3,000 rpm, for 30 minutes. Subsequently, it was decanted for separating the precipitate of the supernatant. Enzyme activity test was based on the oxidation of ABTS.

Results. The results show that at 55 ° C, pH of 4.0 arose greater activity, it was also observed that the addition of the Cu + ion, increased activity in 74%. Activity remained stable before exposure to temperatures up to 65 ° C for a period of time up to 48 hours. In addition to maintaining activity even in the presence of solvents like ethanol and acetonitrile in concentrations of 40% and 20% v/v, in each case, after being incubated in such solvents for 60 hours.

Conclusions. These results open the possibility of testing the complex enzymatic with effluent from the textil industry which have chemical that can be degraded by enzymes and can be found at temperatures relatively high.

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