Title: OPTIMIZATION OF GLUCOSE OXIDASE (EC 1.1.3.4) PRODUCTION FUNGI ISOLATED IN THE AMAZON FOREST.

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Summary:

The soil of the Amazon rainforest, as well as other soils are poorly explored habitats and with great ability to isolate new microbial species for use in biotechnological processes. GOx (Glucose Oxidase) is of considerable commercial importance due to their applications in food science, clinical chemistry and biotechnology. It is the enzyme most widely used as an analytical reagent due to its application in determining the concentration of glucose in biological fluids. The factorial design of experimental design is a valuable tool for rapid assessment of the effects of various components of the medium. This drawing is a primary optimization technique, however, it gives an indication of how each component tends to affect enzyme production. The influence of substrate, a source of nitrogen, aeration, pH and concentration of inoculum. Experiments were incubated in bottles of 25 ml per 25 ° C. It was used as production strain Aspergillus niger MID01, isolated from soil of the Amazon rainforest. For determination of GOx a reaction mixture composed of D-glucose, o-dianisidine in phosphate buffer pH 7.0, peroxidase and GOx enzyme solution was used. The mixture was incubated for 30 min at 40 ° C. The reaction is stopped by adding 0.5 ml of 4N HCl, and quantified at 490 nm. All results are the average result from at least three (n = 3) independent experiments. One unit (U) of GOx activity is defined as the amount of enzyme required to oxidize 1 mmol of glucose / (mL min) under these conditions of test. The results showed that the concentration of substrate (8%), nitrogen source (0.5%), aeration (100 rpm), pH (5.0) and inoculum (104 cells / ml) enabled higher production GOx extracular. It was concluded that the optimization is a mechanism for increasing the production of a potential producer of this enzyme, is of great importance for industrial research.

keywords: optimization, fungal, production, glucose oxidase.

Fomentation Agency: Fundação de Amparo à Pesquisa do Estado do Amazonas - FAPEAM