

Title: FUNGI SELECTION ISOLATED SOIL FROM AMAZON FOREST PRODUCER GLUCOSE OXIDASE (EC 1.1.3.4).

Authors: Sousa, D.R.T. ¹, Santos, E.S. ², Souza, J.V.B. ²

Institution: ¹ UEA - Universidade do Estado do Amazonas (Av. Djalma Batista, 3578 - Flores CEP 69050-010 – Manaus – AM), ² INPA – Instituto Nacional de Pesquisas da Amazônia (Avenida André Araújo 2936-Aleixo-69060-001-Manaus – AM)

Summary:

Biotechnology applications are diverse, interest in enzymes is increasingly expanding. Among the microbial enzymes have GOx (glucose oxidase) that has various applications, especially in industry. There are diverse fungal species that have the capacity to produce the same enzyme and the majority is unexplored. The objective of this study is to select producers of Glucose Oxidase fungi. We used 100 filamentous fungi isolated from the soil in the Adolpho Ducke Forest Reserve, located in Manaus, Amazonas state. The microorganisms were incubated (4x10⁵ spores / ml) in culture medium containing nutrients and supplemented with 8% glucose, pH 5.0, at 25 ° C under orbital shaking (100 rpm). After 72h of incubation, the activities were determined. The fermented broth was centrifuged to separate the biomass. 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. Was detected producing Gox in all strains analyzed, however, only seven stood out as potential producers of this enzyme, five of the genre *Aspergillus* and tow of the *Penicillium* genus. The GOx output values of the seven highlighted ranged from 6.5 U / l 25 U / l. The results were consistent with the literature, which shows these two genres as the main producers GOx industries. It was concluded that the Amazon rainforest holds great potential for producing fungi GOx and that with the optimization of the production of this enzyme process, they can become large industrial producers.

keywords: amazonic, fungal, production, glucose oxidase.

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