

TITLE: PRODUCTION OF XYLANASE BY *CRYPTOCOCCUS PODZOLICUS* ISOLATED FROM SOIL OF THE AMAZON FOREST

AUTHORS: CHAGAS, L.A.; ALENCAR, A.S.; MATOS, I.T.S.R.; VITAL, M.J.S.; ANDRADE-SOUZA, V.

INSTITUTION: Universidade Federal de Roraima, Boa Vista, RR. (AVENIDA CAP. ÊNE GARCÊS, 2413, CEP 69310-000, BOA VISTA – RR, BRAZIL)

ABSTRACT:

Xylan, a polysaccharide found in plant cell walls, contains xylose, the second most abundant component of the lignocellulosic biomass, which is used as substrate for production of ethanol, xylitol and other products. Xylanases are a group of enzymes responsible for the total hydrolysis of xylan, they are produced by molds, bacteria, filamentous fungi, marine algae etc. There are few studies about the production of this group by yeasts, so it is important searching for strains capable of produce this class of enzymes of biotechnological interest. In this context and considering the great and unexplored amount of biodiversity of the Amazon Forest, the study aimed quantify the production of xylanase by yeasts collected in this biome. Strains of the yeast *Cryptococcus podzolicus* (VR520 and VR535), isolated from soil of the Parque Nacional do Viruá, in the State of Roraima, were tested about the production of xylanase. The microorganisms were incubated in erlenmeyers containing liquid oat medium for seven days at 26°C and 120 rpm, every 24 hours were collected aliquots. It was used the 3,5-dinitrosalicylic acid (DNS) method to quantify the xylanase production present in the aliquots. After, absorbance of the colour developed was measured at 540 nm using UV spectrophotometry. The yeasts showed similar production of xylanase enzyme ($p=0.05$) during all the test, with an increase of about four times in from the fourth day, keeping high values until the end of the experiment. From the first to the third day, the average were 12.79 U/mL and 12.88 U/mL, from the fourth to the seventh day, 41.71 U/mL and 50.91 U/mL, respectively, for VR520 and VR535. When compared to other yeasts, and even filamentous fungi, it is noted the great production of xylanase by the strains, evidencing the potential of microorganisms present in the Amazon region.

Keywords: amazon, yeasts, enzymes, xylan

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