

TITLE: SCREENING OF L-ASPARAGINASE FROM ENDOPHYTIC FUNGI ISOLATED FROM *Crinum americanum*

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ABSTRACT:

L-Asparaginase is an enzyme applied in the treatment for Acute Lymphoid Leukemia. This disease mainly affects children and adolescents, leading to several damages. This enzyme catalyzes the reaction that gives aspartic acid and ammonia from L-asparagine, causing the decrease of the same in the blood and interrupting the supply of L-asparagine by leukemic cells, eliminating them. Currently, much of its production originates from prokaryotes, which can lead to adverse reactions such as hypersensitivity. As endophytic fungi are potential drug producers, and because they are eukaryotic organisms, the enzyme from fungi can result in a decrease in adverse effects, making possible a new option to obtain them. The fungi were isolated from leaves of *Crinum americanum*, family of Amaryllidaceae. Their surfaces have been decontaminated with Detergent, Sodium Hypochlorite, and Alcohol. Leaf fragments were placed on petri plate with Sabouraud agar medium + Malt Extract. Successive streaks were performed in order to obtain one species per plate and were maintained at 28 ° C during growth. Fungi screening for L-asparaginase production was carried out on CDM agar pellets containing the 5 mm mycelia of each fungus, growth compounds, L-asparagine and red of phenol, where the reaction of catalysis of the amino acid originated Ammonia, altering the pH of the medium and forming a halo around the fungal mycelia. The three fungi with larger halos without altering the controls had mycelia inoculated in liquid medium for 5 days at 28°C, 120 rpm. The quantification of L-asparaginase was performed by means of the aspartic β -hydroxamate produced by the hydroxylaminolysis reaction of the enzyme in the presence of Hydroxylamine with 0.1g of the grown fungus. The FCEL4 coded fungus presented average activity of the triplicate of $0,12 \pm 0,01$ U/g_{cells}. The FCEL5 coding showed average activity $0,33 \pm 0,06$ U/g_{cells}. The FCEL6 fungus presented average activity of $0,04 \pm 0,01$ U/g_{cells}. As a conclusion, the fungi isolated of *Crinum americanum* in study present enzymatic activity, serving as a starting point for new researchs, be had showing a alternative for obtaining L-asparaginase.

KEYWORDS: L-ASPARAGINASE, ENDOPHYTIC FUNGI, ACUTE LYMPHOID LEUKEMIA

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