CYTOTOXICITY OF ETHANOLIC EXTRACT AND ITS FRACTIONS OF BYRSONIMA DUCKEANA W. R. ANDERSON (MALPIGHIACEAE) ON COLON CANCER CELLS

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Human has used plants since earlier times and natural products are considered a model to drug development against cancer. In fact, many drugs currently used are derived from them. In this study, we investigate the cytotoxicity of ethanol extract of Byrsonima duckeana W. R. Anderson and its fractions against cell line. We also evaluate its haemolytic potential and toxicity on Artemia salina. Plant was collected at the Adolpho Ducke Manaus Forestry Reserve – AM, and identified. Leaf were dried, ground and extracted with ethanol in a Sohxlet apparatus, yielding the crude extract (EB), which was partitioned using solvents of increasing polarity, resulting in hexane (HEX), chloroform (CLO), ethyl acetate (FAE) and remaining (FREM) fractions. Toxicity of the EB and the fractions was evaluated by Artemia salina nauplii dead after 24 hours of incubation. Haemolytic activity was measured using sterile paper discs impregnated with 1000 μg of the samples placed on blood agar plates. After 24 hours, the hemolysis halo was verified. Cytotoxicity assessment was performed by MTT assay at 1-1000 μg/mL of each sample using U937 (human monocyte) and HT29 (tumor colon) cell lines. The results were compared by the Tukey test. The results show no toxicity at the Artemia salina assay. Haemolytic activity was observed only at the CLO and FAE fractions (65.6 % and 48.4% hemolysis, respectively). The same fractions decreased cell viability on HT29 line at 20-70% and 30-70%, respectively. These results suggest that the more polar constituents of EB are more related to toxicity. Interesting, there was no toxicity to non-tumor cells U937, which might indicate some cell selectivity. Therefore, this study provides preliminary evidence of cytotoxicity of the fractions obtained from Byrsonima duckeana at the HT29 cell line, which may be important for further studies on the anticancer potential of this species.

Keywords: Medicinal Plant, Alternative Medicine, Cytotoxicity, Cancer Cells.