EVALUATION OF CYTOTOXICITY OF ESSENTIAL OIL FROM *Ocimum gratissimum* (ALFAVACA-CRAVO) IN RATS NEUTROPHILS.

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Key words: citotoxicity, neutrophils, *Ocimum gratissimum*

Introduction: *Ocimum gratissimum* (Labiatae) is an aromatic plant popularly known as alfavaca-cravo. The essential oil from the aerial parts of plant has antibacterial and anti-inflammatory activities. The aim of this study was to perform a toxicological evaluation of the essential oil from *O. gratissimum* (EOOG) in rat neutrophils, establishing a curve time-response in order to guide the subsequent studies.

Experimental Part: The EO from the aerial parts of *O. gratissimum* was obtained by hydrodistillation in a Clevenger apparatus for 4 hours (content: 1.5±0.03%). Neutrophils were obtained from Wistar rat peritoneal lavage with 99% cell viability (trypan blue exclusion). Neutrophils (2.5 x 10⁶ cells/mL) were incubated with EOOG (5, 10, 20, 50 and 100µg/mL) or 1% DMSO (control group) at times 0.5, 1 and 2 hours (37°C; 5% CO₂ and 95% O₂). The samples were analyzed by flow cytometry to evaluate the phosphatidylserine externalization by using annexin V binding assay, and DNA fragmentation, using propidium iodide which binds to DNA. The results are expressed as mean ± S.E.M. The statistical significance was determined by ANOVA, followed by Tukey’s test. The significance level was set at P < 0.05.

Results/Discussion: In annexin V assay, the EOOG (5, 10 and 20µg/mL) in cell suspension for until 1 hour did not promote a significant decrease of cell viability (90.63 ± 1.60, 87.85 ± 4.06, 84.98 ± 2.07%, respectively) when compared to control (90.94 ± 3.04%). In the assessment of DNA fragmentation, incubation (0.5 – 2h) of cells with EOOG (5, 10, 20µg/ml) did not caused a DNA fragmentation (4.93 ± 0.75, 4.35 ± 0.42, 9.05 ± 1.19%) when compared to control (8.52 ± 1.65%).

Conclusion: The EOOG did not show concentration and time dependent cytotoxicity at concentrations until 20µg/mL. Moreover, the EOOG does not induce changes in the pattern of death of neutrophils and does not promote changes at the DNA level.

Financial Support: PRONEM-FUNCAP and CAPES