Evaluation of cytotoxicity and anti-inflammatory activity in human neutrophils of Tonantzitlone B, a diterpene isolated of *Sebastiania macrocarpa* and Tonantzitlone B hydrogenated.

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**Introduction:** Tonantzitlone (TON) is a diterpene from *Sebastiania macrocarpa*, a plant traditionally used to treat infectious diseases. TON was subjected to catalytic hydrogenation with palladium-carbon in ethanol and H₂ atmosphere, providing the compound Tonantzitlone hydrogenated (TON-H). The aim of the present study was to evaluate the citotoxicity and anti-inflammatory activity of TON and TON-H in human neutrophils.

**Experimental part:** Human polymorphonuclear cells (2.5x10⁶ cells/mL), mainly neutrophils (80-90%) were exposed to TON (1, 10 e 100µg/mL), TON-H (1, 10 e 100µg/mL), HBSS (negative control), Triton x-100 (cytotoxic drug) or vehicle (DMSO, 1%) to evaluate the cytotoxic effect by activity of lactate dehydrogenase (LDH). The anti-inflammatory activity of TON (1-100µg/mL), TON-H (1-100µg/mL) or Indomethacin (INDO, 36µg/mL) was evaluated in the release of myeloperoxidase (MPO) by PMA (0.1µM) in neutrophils. The results were expressed as mean ± SEM as percentage of inhibition.

**Result/Discussion:** It was observed that incubation with TON (1-100 µg/mL) did not increase LDH activity (21.37±2.6; 22.39±3.9 and 17.81±1.0; respectively) in comparison to control (27.69±3.9), indicating absence of cytotoxicity. The same was observed in cells treated with TON-H (1-100µg/mL) (62.3±1.4;67.80±0.8;69.8±1.0;respectively) compared to control (46.6±0.6). However, TON (1-100µg/mL) presented an inhibitory effect on MPO released from neutrophils at higher concentrations (TON 100µg/mL; 154.2±57.9; control: 389.3±41.8). Similar results were observed with INDO. The TON-H (1-100µg/mL) did not inhibit the release of MPO (12.8±1.6; 25.5±3.1; 41.5±3.0; respectively) compared with INDO (70.6±1.7).

**Conclusion:** It was observed that TON and TON-H did not promote changes on LDH activity. Only TON showed an anti-inflammatory activity through inhibition of MPO release.

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