In vitro cytotoxicity of *Tapirira guianensis* Aubl. extracts in oral cancer cell lines

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**Introduction:** Oral squamous cell carcinoma is one of the most frequent cancers that affect the head and neck region. Unfortunately, aggressive treatments may cause harmful side effects to the patient, affect the normal cells and do not eliminate all tumor. In this last decade, investigations on natural compounds have been particularly successful in the field of anticancer drug research. **Objective:** Evaluate the antitumor effect of *T. guianensis* extracts on a panel of head and neck cell lines. **Methodology:** To verify the in vitro effect of *T. guianensis* extract (C1-hexane; C2-ethyl acetate; C3-crude; C4-hidroalcoholic) on head and neck cell lines (SCC14, SCC25, Fadu and HN13) the following assays were performed: Cytotoxicity effect of different extract fraction were measured by MTS (IC50). Migration rate was measured by wound healing assay. Invasion was performed in HN13 cell line by Matrigel assay. Lastly, the expression level of apoptosis-related molecules (PARP, Caspases 3, and Fas) was detected using Western blot. **Results:** All fractions caused a moderate (SCC4 and Fadu) or high (HN13) cytotoxicity, except for SCC25 cell line, that which showed a resistant profile. HN13 cell line is more sensitive to all fractions and represents a sensitivity model to the next assays. C3 and C4 fractions showed migration inhibition, (wound healing assay), reduced the matrix degradation (Matrigel), and decreased cell invasion ability. The HN13 migration index was measured using empty inserts (without matrigel) in which we found a significant reduction of the migratory potential, exposed to the fractions C2, C3, C4. Furthermore, overexpression of Fas, caspase-3 and increased of cleaved PARP indicates a possible extrinsic

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pathway of apoptosis. **Conclusion:** *T. guianensis* extracts could efficiently inhibit proliferation and induce apoptosis in HN13 cell line.

**Keywords:** antitumor, cytotoxic activity, natural compounds.

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