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BIOGUIDED STUDY OF *Jatropha gossypiifolia* - *IN VITRO* ANTI-*Helicobacter pylori* AND CYTOTOXICITY AGAINST GASTRIC ADENOCARCINOMA CELLS

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Helicobacter pylori is a gram-negative bacterium that colonizes the human stomach, and its infection is strongly linked to the development of gastric inflammatory disorders, from gastritis to cancer and is designated as a Class I carcinogen by the International Agency for Research on Cancer (IARC). The global prevalence is approximately 43%, and the increasing resistance to the treatment compromises the eradication of the pathogen. This requires the search for alternative treatments, and this work aimed to assess the efficacy of *Jatropha gossypiifolia* L. (Euphorbiaceae), which chemical profile had previously been studied in recent research conducted in our laboratory, against *H. pylori* and gastric adenocarcinoma cells (AGS). Liquid-liquid extractions were performed using the ethanolic crude extract to yield hexane, ethyl acetate, and aqueous fractions. The most active fraction was analyzed using liquid chromatography combined with mass spectrometry (LC-MS). The spectrum data was processed and obtained in MZmine by comparing the compounds with the Global Natural Products Social Molecular Networking (GNPS) database. The anti-*H. pylori* activity was evaluated using the broth microdilution method with ATCC 43504 and a clinical strain to find the minimum inhibitory concentration (MIC). The minimal bactericidal concentration (MBC) was determined as the concentration that did not exhibit bacterial growth on blood agar. The cytotoxicity was assessed for AGS and L-929 cells, which is non-cancerous, by the MTT assay to determine the cytotoxic index (CI_{50}) and the selectivity index (SI). The crude extract and its derived fractions shown activity against *H. pylori* and AGS cells, especially the hexane fraction, which exhibited a MIC and MBC of 16 and 32 µg/mL, respectively, against the ATCC strain, and a MIC and MBC of 64 µg/mL for the clinical strain. The hexane fraction demonstrated CI_{50} of 13.33 ± 0.29 µg/mL and a SI of 2.4, the best findings of the samples tested. The antibacterial and cytotoxic action may be attributed to the presence of terpenoids like jatrophenone, jatrophone and sumaresinolic acid together with flavonoids such as vitexin and isovitexin, as they were found in LC-MS. Further research should be conducted for the evaluation of safety and efficacy of this fraction *in vivo*.

Keywords: *Jatropha gossypiifolia,* Euphorbiaceae, *Helicobacter pylori,* gastric cancer, terpenoids