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ANTI-Helicobacter pylori AND ANTICANCER PROPERTIES OF Persea americana SEED

Dalila Nickel Loose[1*], Amanda Cavalcante Gonzaga Nunes[1], Ricardo Machado Kuster[2], Rodrigo Rezende Kitagawa[1], Lorena Carnielli Queiroz[1], Rita de Cássia Ribeiro Gonçalves[1].

dalilaloose@gmail.com

1-Graduate Program in Pharmaceutical Sciences (PPGCFAR), Federal University of Espírito Santo (UFES), Vitória, ES, Brazil. 2-Graduate Program in Chemistry (PPGQUI), Federal University of Espírito Santo (UFES), Vitória, ES, Brazil.

Helicobacter pylori is a gram negative bacteria whose prevalence is over 40%, being the major cause of gastric cancer. Nowadays, incidence of side effects and the high cost of these drugs contribute to poor compliance and therapeutic failure, which is associated with the emergence of resistant strains. In the search for novel therapies, natural products such as avocado seed (*Persea americana*) have historical relevance to treat gastric disorders, and its constituents have great bioactive potential. Therefore, this study aimed to evaluate the anti-*H. pylori* and anti-gastric adenocarcinoma activities of avocado seed extract. The hydroalcoholic extract (70% ethylic alcohol) was prepared by 7 days maceration of previously dried and grounded avocado seeds. The result solution was filtered and the solvents were eliminated by rotary evaporation and lyophilization to obtain the crude extract. Anti-*H. pylori* activity of the extract was determined by the broth microdilution method with resazurin using ATCC 43504 or clinical strains (Parecer 6.114.766 - CEP/Ufes) in brucella broth. Cytotoxicity assays followed the MTT method in AGS (adenocarcinoma) and L929 (fibroblasts) cells, using cisplatin as standard drug. Chemical characterization performed by high resolution mass spectrometry revealed the presence of *Laureaceae* acetogenins, such as avocadene and avocadyne. During the antibacterial test with, the extract showed inhibitory activity at 64 µg/mL and bactericidal activity at 128 µg/mL, a good result for crude extracts. These values were similar in three clinical strains, including in amoxicillin resistant ones. Antitumoral activity on AGS cells had an IC_{50} of 12,16 ± 0,6222 µg/ml, near to cisplatin (11,39 ± 0,3305 µg/ml). Nevertheless, in L929 cell avocado seed achieved higher values (110.93 ± 7.1728 µg/ml) compared to cisplatin (5.79 ± 0.2558 µg/ml). These results indicate that avocado seed compounds have been more specific to cancer cells, with a selectivity index of 6,78 compared to 0,5 of cisplatin. Hence, avocado seed compounds have both anti-*H. pylori* and anticancer activity with low toxicity to healthy cells *in vitro*, but its mechanism of action stands in need of elucidation by further studies.

Keywords: *Helicobacter pylori, Persea americana, Anticancer, Antimicrobial.*