

Evaluation of Cytotoxicity and Hemolytic Activity of Extracts from *Apodanthera congestiflora* (Cucurbitaceae) Root

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INTRODUCTION *Apodanthera congestiflora* (Cucurbitaceae) is used in folk medicine to combat back pain. However, there are no studies on chemical composition and biological activities of this plant. **OBJECTIVE:** This work investigated hexane, ethyl acetate and methanol extracts from *A. congestiflora* root for cytotoxicity on cancer cells and hemolytic activity. **MATERIAL AND METHODS:** Extracts were obtained using a Soxhlet apparatus. Cytotoxicity of extracts (0.39-50 µg/mL) was evaluated by MTT method using the cancer cell lines NCI-H292, HEP-2, HL-60, K562, MOLT-4 and HT29. The concentration that reduced cell viability by 50% (IC₅₀; µg/mL) was calculated. Hemolytic activity assay was performed in 96 well microplates. Aliquots (100 µL) of extracts were 1:1 diluted in wells containing 100 µL of 0.85% NaCl resulting in a concentration range of 15.62–2000 µg/mL. Each well received 100 µL of a 2% (v/v) suspension of mouse erythrocytes in 0.85% NaCl containing 10 mM CaCl₂. The plate was agitated for 1 h and incubated for 1 h at 27°C. The supernatant was collected and released hemoglobin was measured at 450 nm. The effective concentrations that resulted in 50% hemolysis (EC₅₀) were determined. Extracts with EC₅₀ < 200 µg/mL were considered hemolytic. **RESULTS AND DISCUSSION:** IC₅₀ values determined for hexane extract were 3.75 (NCI-H292), 4.2 (HEP-2), 12.5 (HL-60), 15.53 (K562), 14.08 (MOLT-4) and >50 (HT29). Ethyl acetate extract showed IC₅₀ of 18.02 (NCI-H292), 32.0 (HEP-2), 12.5 (HL-60), 20.95 (K562), 19.56 (MOLT-4) and >50 (HT29). Methanol extract was not cytotoxic to these cells. Hexane, ethyl acetate and methanol extracts were not hemolytic agents since showed EC₅₀ of 1,087, 594.1 and 987.8 µg/mL, respectively. **CONCLUSION:** Hexane extract from *A. congestiflora* root was the highest active on cancer cells and did not promote damage to membrane of erythrocytes. These data stimulate the investigation of compounds responsible for anticancer activity.

Keywords: cancer, hexane extract, hemolysis, root.

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