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Factors associated with the implementation of an improved community health fund in the Ubungo Municipality Area, Dar es Salaam Region, Tanzania

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Background: This research was performed to synthesize nanophytosomes-loaded High Phenolic Fraction (HPF) from Juniperus polycarpos fruit extract and investigate its antiproliferation effects against breast cancer in mice model.

Results: The Nanophytosomes-loaded HPF from Juniperus Polycarpos fruit extract was synthesized. The mice trial was conducted to determine the possible toxic effects of the synthesized nanophytosomes. The anticancer, pro-apoptotic, and antioxidative activities of the nanophytosomes were determined. The nanophytosomes-loaded HPF had a spherical structure with a size of 176 nm and a polydispersity index coefficient of 0.24. The in-vivo study manifested that nanophytosomes-loaded HPF significantly improved weight gain and food intake compared to the negative control group ($p<0.05$). The nanophytosomes-loaded HPF significantly enhanced the expression of bax (3.4-fold) and caspase-3 (2.7-fold) genes but reduced bcl2 (3.6-fold) gene expression in tumor cells. The average tumor size was significantly decreased in mice treated with nanophytosomes-loaded HPF ($p<0.05$). The expression of GPX (2.3-fold) and SOD (2.7-fold) antioxidants in the liver of mice supplemented with nanophytosomes-loaded HPF was significantly developed compared to the negative control ($p<0.05$). The nanophytosomes-loaded HPF did not show toxicity on normal cells.

Conclusion: Our results indicated that nanophytosomes-loaded HPF might be a potential anticancer agent for the breast cancer treatment.

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