



Applicant Information

Applicant Name	Applicant Email	Affiliation	Country
Mr Emmanuel Junior Hamenoo	ehamenoo19@sbbs.uhas.edu.gh	University of Health and Allied Sciences	Ghana

Abstract Details

Title:

The Cytotoxicity of Zingiber officinale (Ginger) Essential Oil on Normal Prostate Cells (PNT2)

Category:

Non-communicable diseases including mental health

Authors:

Emmanuel Junior Hamenoo¹, Henrietta Kwansa-Bentum¹, Daniel Elorm Kabotso², Francisca Adzaho¹
¹Department of Biomedical Sciences, School of Basic and Biomedical Sciences, University of Health and Allied Sciences, Ho, Ghana,
²Department of Basic Sciences, School of Basic and Biomedical Sciences, University of Health and Allied Sciences, Ho, Ghana

Objectives:

This study aimed to investigate the cytotoxic effects of ginger essential oil on normal prostate cells (PNT2) to explore its potential use in prostate cancer management.

Method:

Ginger essential oil was extracted using hydrodistillation. PNT2 cells were cultured and treated with ginger essential oil at concentrations of 1 μ g/mL, 5 μ g/mL, and 10 μ g/mL. Cell viability was assessed using the MTT assay after 48 hours of treatment. Paclitaxel, a chemotherapy medication served as a positive control.

Results:

The cytotoxicity of ginger essential oil on PNT2 cells was found to be dose-dependent. At concentrations 1 μ g/mL, cell viability was 94.05%, decreasing to 43.77% at 5 μ g/mL, and further reduced to 27.29% at 10 μ g/mL. In comparison, paclitaxel, a chemotherapy medication used in the treatment of cancers demonstrated a cell viability of 73.32%. Untreated cells maintained 100% viability. These results suggest that ginger essential oil significantly reduces cell viability at higher concentrations.

Conclusion:

Ginger essential oil exhibits a dose-dependent cytotoxic effect on normal prostate cells, indicating its potential as an alternative treatment for prostate cancer. However, further studies are required to understand the underlying mechanisms of cytotoxicity, optimize dosage to minimize adverse effects on normal cells, and investigate the specific molecular pathways involved.

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