

Role of Ginger in Prostate Cancer In: *Food, Diseases and Agriculture : An Anthology* edited by Dr. Atanu Deb; © New Delhi Publishers, New Delhi: 2021, Article pp.467-484., ISBN: 978-93-91012-95-3; DOI: 10.30954/ndp-food diseases.33

Role of Ginger in Prostate Cancer

Shivangi Mohapatra

Department of Zoology, School of Applied Science, R&A Centre for Phytopharma, Centurion University of Technology and Management, Odisha

Email: 190705180003@cutm.ac.in

Abstract: The aim of the article is to describe the extraction process and how the bioactive compounds present inside the ginger reduces the effect of cancer and play a role in anticancer activity. PC-3 and LNCaP cancer cells are taken for investigation. Both *in vitro* and *in vivo* experiments shows the anticancer activity of the *Zingiber officinale* extracts. Numerous bioactive compounds were separated and noted by using different extraction procedures and their anticancer activities were tested later on PC-3 and LNCaP cancer cells by in silico analysis or by molecular docking of the plant contents against the cancerous cells. Historical background of ginger species clearly depicts the anticarcinogenic contents that reduces the effects of prostate cancer in the ancient times till to date. Ethanol concentrates of eight species (*Amomum cardamomum*, *C. longa*, *C. mangga*, *C. xanthorrhiza*, *Zingiber aromaticum*, *Z. officinale*, *Z. cassumunar*) showed a solid inhibitory impact on the development of the malignancy cells. Ginger (*Zingiber officinale* Roscoe) is a superb wellspring of a few bioactive phenolics, including non-unpredictable impactful mixtures like gingerols, paradols, shogaols and gingerones. Ginger has been known to show calming, cell reinforcement and antiproliferative exercises, demonstrating its promising job as a chemopreventive specialist. Here, we show that entire ginger concentrate (GE) applies critical development inhibitory and passing inductive impacts in a range of prostate disease cells. To the most amazing aspect our insight, this is the primary report to exhibit the *in vitro* and *in vivo* anticancer movement of entire ginger extract for the administration of prostate disease.

Keywords: Bioactive, Ethanol, Prostate cancer, *Zingiber officinale* Roscoe

Introduction

Cancer is an unpredictable and a fatal disease that puts adverse effects around the worldwide. In this changing world, advance technology development and numerous research improvements yet there remains a fear of disease which attaches to our body like a pest inside the host. Cancer is an uncontrolled growth of abnormal cells that may occur anywhere in the body. The most hazardous impact on the body occurs when there it start to infiltrate normal cells present inside the body. Today, cancer become a serious killer around the worldwide as accounted for 8.2 millions of people deaths (i.e., 22% of all deaths as a non-communicable diseases). According to recent survey, scientific communities

predicts if this data continues the mortality rate will be double in 2030 (i.e., increase in 70%). These cancers may happen to cause predominantly in USA or less predominantly in other countries which usually represents the combination of genetic or environmental factors for the cause. Prostate disease (PC) is the main threat among men around the globe. Despite the fact that it is the second most occurrence malignant growth, it stands just at the 6th situation in death rate. This tremendous distinction among occurrence and mortality is because of the sluggish and consistent pace of progress of the infection bringing about a long idle preclinical stage. Around 80% of the people during their late fifties have a high risk of