

## Euro Surgery 2020. Phytochemical Screening and In-vitro Ant oxidant and Ant proliferat ve Act vity of Aqueous Leaf Extract of Ximtenia americana against Non- Small Cell Lung Cancer

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**Introduction:** Cancer is a general term applied of series of malignant diseases that may affect different parts of body. These diseases are characterized by rapid and uncontrolled format on of abnormal cells, which may mass together to form a tumor or proliferate throughout the body by the process of metastasis. The main forms of cancer treatment for cancer in humans are surgery, radiat on and drugs (chemotherapeut c agents) can of en provide temporary relief of symptoms, prolongat on of life and occasionally cures. Cancer cont nues to represent the largest cause of mortality in the world and claims over 6 million lives every year [1]. In developing countries since from following decades, the numerous of people with cancer will cont nue to increase may be due to life

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2016, about 1 of 4 cancer deaths are from lung cancer. Every year, more people die of lung cancer than of colon, breast and prostate cancers. Furthermore if you consider 5 year survival rate for lung cancer patients it drops from 54% to 4% in patients with metastat c lung cancer [7].

However, most of the ant cancer drugs currently used such as doxorubicin, paclitaxel give rise to undesirable side ef ects such as cardio toxicity and tumor drug resistance [8]. Since from ancient tme's plant secondary metabolites and their semi synthet c derivat ves cont nue to play an important role in the treatment of cancer as novel drugs [9,10] and 60% of

currently used ant cancer agents are derived in one way or another from natural sources [11]. Plant derived natural products such as flavonoids, terpenes, alkaloids and phenols are gaining more importance due to their diverse pharmacological properties including cyto-toxic and cancer chemo protect ve effects [12].

Plants are the rich sources of secondary metabolites such as alkaloids, phenols, flavonoids, tannins, saponins, glycosides, terpenoids etc. that possess a wide array of biological properties including antibacterial, antifungal, antioxidant and anticancer [13]. Phytochemicals and even the whole plant extracts are known to prevent arrest or reverse the cellular and molecular processes of carcinogenesis due to its multiple intervention strategies [14] because of these reason herbal medicines making an impact on both world health and international trade. Medicinal plants cont nue to play a central role in the health care system of the large proportions of the world's population [15].

However, till-date a systematic study on biological activities of chemical constituents present in *X. americana* is still not agreeable [23,24]. The extensive literature survey exposed that only few reports exist on this plant leaves, but no information are available on ant cancer activity in particular with lung cancer. Henceforth, present study a 1 1 e( t oxidant and ant proliferat ve activity of aqueous extract of *Ximenia americana*.

*Ximenia americana* leaves were collected from Karnataka University Campus, Dharwad, India in the month of June, 2017. The leaves were identified and

authenticated by Dr. Kotresha K., Department of Botany, Karnatak Science College, Dharwad, Karnataka, India. A voucher specimen (NO-01/2016) was deposited at the Department of Botany, Karnatak Science College, Dharwad, Karnataka. Fresh disease free plant material was washed under running tap water, shade dried and pulverized to fine powder using mechanical grinder. The powder was stored in airtight containers at room temperature for further use.

**Chemicals:** 3-(4,5-dimethyl thiazol-2-yl)-5-diphenyltetrazolium bromide (MTT), Fetal Bovine serum (FBS), Phosphate Buffered Saline (PBS), Dulbecco's Modified Eagle's Medium (DMEM) and Trypsin were obtained from Sigma Aldrich Co, St Louis, USA. EDTA, Glucose and antibiotics from Hi-Media Laboratories Ltd., Mumbai. Dimethyl Sulfoxide (DMSO) and Propanol from E. Merck Ltd., Mumbai, India.

**Cell lines:** A549 & NCI-H460 non-small cell lung cancer cell lines were procured from National Centre for Cell Sciences (NCCS), Pune, India. Stock cells were cultured in DMEM supplemented with 10% inactivated Fetal Bovine Serum (FBS), penicillin (100 IU/ml), streptomycin (100 µg/ml) and amphotericin B (5 µg/ml) in a humidified atmosphere of 5% CO<sub>2</sub> at 37°C until confluent.

**Crude extract:** The 100g of dried *X. americana* leaf material was extracted with distilled water using Soxhlet apparatus for 4-6 hrs at 40-50°C. The extractant solvent was evaporated using rotary evaporator and

vated FBS to obtain a stock solution of 1 mg/ml con