Euro Surgery 2020: Phytochemical Screening and In-vitro Antioxidant and Antiproliferative Activity of Aqueous Leaf Extract of Ximtenia americana against Non- Small Cell Lung Cancer

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Introducton: Cancer is a general term applied of series of malignant diseases that may afect diferent parts of body. These diseases are characterized by rapid and uncontrolled formaton 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, radiaton and drugs (chemotherapeutc agents) can ofen provide temporary relief of symptoms, prolongaton of life and occasionally cures. Cancer contnues 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 contnue to increase may be due to life Ŭ ◡ o yi ʒ om eDž alŁ oĞdz r nl mf Ɛh Ƀ er ɋ ar ¸ Ł ň ś Ţ ; ase Ī 43 . ėGn

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 patents it drops from 54% to 4% in patents with metastatc lung cancer [7].

However, most of the antcancer drugs currently used such as doxorubicin, paclitaxel give rise to undesirable side efects such as cardio toxicity and tumor drug resistance [8]. Since from ancient tme's plant secondary metabolites and their semi synthetc derivatves contnue to play an important role in the treatment of cancer as novel drugs [9,10] and 60% of currently used antcancer agents are derived in one way or another from natural sources [11]. Plant derived natural products such as favonoids, terpenes, alkaloids and phenols are gaining more importance due to their diverse pharmacological propertes including cyto-toxic and cancer chemo protectve effects [12].

Plants are the rich sources of secondary metabolites such as alkaloids, phenols, favonoids, tannins, saponins, glycosides, terpenoids etc. that possess a wide array of biological propertes including antbacterial, antfungal, antoxidant and antcancer [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 multple interventon strategies [14] because of these reason herbal medicines making an impact on both world health and internatonal trade. Medicinal plants contnue to play a central role in the health care system of the large proportons of the world's populaton [15].

However, tll-date a systematc study on biological actvites of chemical consttuents present in X. americana is stll not agreeable [23,24]. The extensive literature survey exposed that only few reports exist on this plant leaves, but no informaton are available on antcancer actvity in partcular with lung cancer. Henceforth, present study a Θ = = e 4 toxidant and antproliferatve actvity of aqueous extract of Ximenia americana.

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

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authenticated by Dr. Kotresha K., Department of Botany, Karnatak Science College, Dharwad, Karnataka, India. A voucher specimen (N0-01/2016) 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-H460non 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 amphoteri¬cin B (5 µg/ml) in a humidified atmosphere of 5% CO2 at 37°C until confuent.

Crude extraction: The 100 g of dried X. americana leaf material was extracted with distlled water using Soxhlet apparatus for 4-6 hrs at 40-500°C. The extractant solvent was evaporated using rotary evaporator and

vated FBS to obtain a stock solu t on of 1 mg/ml con