Analysis of Cytotoxic and Gene Expression of KRAS Gene in Lung Cancer Cell Line of A549 Treated with Tinospora Coridifolia Extract

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Abstract: ***There has been global resurgence of interest in herbal drugs in the recent past. Although herbal medicines are very often efficient in treating different ailments, these medications are either unscientifically utilized or misused. Thus, in the light of modern medicine, these herbal drugs deserve thorough research. Medicinal properties consist of those plants that are used in treating and preventing specific and human has been using herbs for generations around the world, due to charm needed to cure the disease, many people have come to the conclusion that even chemical drugs their answers may already be sick of these medications may be harmful for health them in the future. Still, the use of plants as a source of medicine is very much important for human beings. Identify medicinal and how to use them is so important.***

Keywords: Degeneration, Drugs, macromolecules, toxicity.

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I INTRODUCTION

Normally, normal cells multiply to form new cells and worn out cells are removed in an orderly manner. This is a regulated by process controlled by many enzymes and checkpoints. Cancer is initiated when this controlled process is deregulated and cells in any particular part of the body starts multiplying in an uncontrolled fashion[1],[3],[5]. These cancerous cells are different from normal cells in many ways which includes their growth pattern and cell death mechanism . Cancerous cells do not die as they deregulate the normal cell death mechanisms and continuously multiply. These altered cells also gain the ability to invade other tissues and parts of the body to form secondary tumors.

The main reason for alteration of normal cells into cancerous cells is DNA damage[2],[4],[6]. This is because DNA is the genetic material which is responsible for every process taking place in cell and every protein catalyzing that process. When a normal cell is considered, if the DNA gets damaged by either physical or chemical agents, various cellular mechanisms repairs the damage; if these mechanisms are unable to repair the damage, the cell undergoes controlled death pathway called as apoptosis[7],[9] ,[11]. These cells are removed because if the cell divides, these DNA alterations will be continued which can be harmful for the body.

Most main lung cancers are originatedin epithelial cells. Cou ghing (including blood coughing), weight loss, shortness of breath, and chest pain are prevalent symptoms of this diseas e.Most of the primary lung cancers arise from the epithelial cells. The common symptoms of this disease are coughing (including coughing up blood), weight loss, shortness of breath, and chest pains.

The main reason for occurrence of lung cancer is attributed to tobacco exposure which is commonly long term [4]. With tobacco exposure covers almost 80-90% of lung cancer cases, only 10-15% occurrence is seen in people who are not exposed to tobacco. The other factors responsible for lung cancer include genetic factors, exposure to air pollution, radiations, second hand smoke[8],[10] ,[12]. Lung cancer can be diagnosed with many techniques such as radiographs, CT scans etc. These initial diagnostic techniques are followed by confirmatory tests such as biopsy [10]. Treatment options are considered based on stage of the disease, health of the patient.

II. MATERIALS AND METHODS

A.Collection of the Material:

Anti-Bacterial Activity:

- ✓ Inoculum Preparation:
- Luria-Bertani Broth

B Cell Culture:

1. Neutralization:
2. Splitting or Culturing the Cells

C. Cell Viability Test:

Composition of Preservation Medium:

Preservation of Cells:

- The cells were splitted with Minimal Essential medium i.e., after trypsinization and addition of medium in to centrifuge tube.
- To provide slow cooling, we have to arrange cotton in a container and wipe it with isopropanol and again cotton, cryovials were kept and again cover with

Revised Manuscript Received on July 22, 2019.

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cotton (It should contain Isopropanol so that it will not dry up).

D. Anti-Cancer Activity:

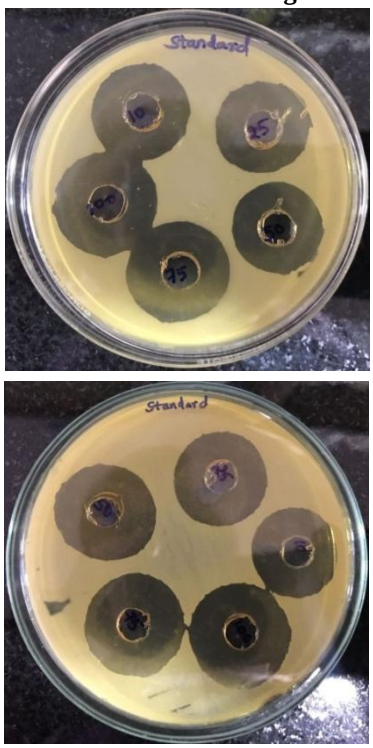
Maintenance of Cell Line: The A549, The liver cancer cell line was bought from NCCS, Pune and the cells were retained in DMEM medium supplemented wit h 10% FBS and penicillin / streptomycin (0.5 mL-1) antibiot ics, at an environment of 5% CO 2/95% air at 37 0 C.

III. RESULTS & DISCUSSION

Anti Bacterial Activity:

Gram Positive Strain	*Staphylococcus aureus*
Gram Negative Strain	*E.coli*
Standard Drug for Gram Positive	Norfloxacin
Standard Drug for Gram Negative	Ciprofloxacin

Gram Positive &Gram Negative:



A

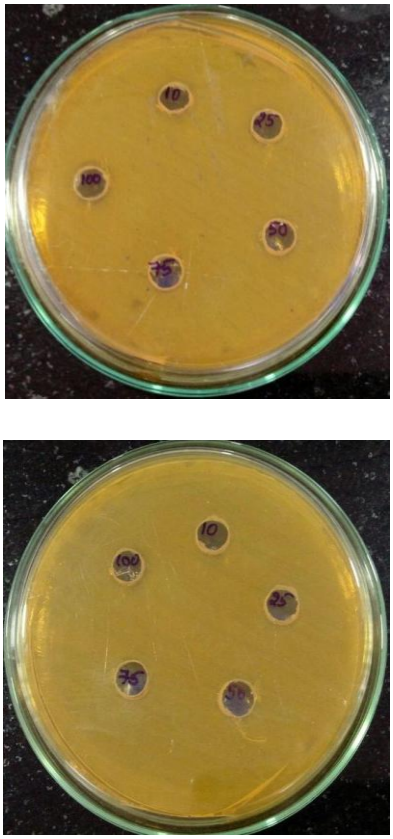
B

Figure 1: Zone of Inhibition shown Anti Bacterial Activity; A: Gram Positive Standard Norfloxacin; B: Gram Negative Standard Ciprofloxacin

Strain	Zone of Inhibition(mm)				
	10 µg	25 µg	50 µg	75 µg	100µg
Gram Positive	9	10	11	14	16
Gram Negative	10	11	13	15	16

Table 1: Zone of Inhibition representing in mm A: Gram Positive Standard Norfloxacin;

GRAM POSITIVE:



A

B

Figure 2: Zone of Inhibition shown in *staphylococcus aureus* and *Bacillus* Anti Bacterial Activity in Chloroform Extract

S. No	Compound		Zone of Inhibition(mm)				
			10 0µg	25µg	50µg	75µg	100µg
1	Chloroform Extract		-	-	-	-	-
2	Chloroform Extract		-	-	-	-	-

Table 2: Zone of Inhibition in mm shown in *staphylococcus aureus* and *Bacillus* Anti Bacterial **activity in Chloroform Extract**

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