J. Appl. E11viron. Biol. Sci., 5(12)357-360, 2015
tD 2015, TextRoad Publica tion

ISSN:2090-4274
Journal of Applied Environmental
a nd Biological Sciences
www.texlroad.com

The Level of Src, Her2, Bc12, Vegf, Kras Genes Expression in the Cases of Lung Cancer Surgery

Pa,naiill Boloori [1]..i; Reza Haji Hosseini [1]·[3], Reza Shekh-Nejad, [1]\ Mohsen Hamedani [1/5]

[1] 8iology Department of Tofigh Daru
[2] M.Sc. Of Biochem istry, Department of Biology, Payamnoor Uni versity, Tehran, Iran
[3] Professor of Biochem istry Department, Paya mnoor Uni versity
[4] Ph.D. of Biochem istry. UniYersity of Geogia
[5] Ph.D. of Toxicology, Shahid Beheshti University

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Acee led: Novemher 22, 20/5

ABSTRACT

Backg rou nd: Lu ng cancer is the most common cancer i n men and women. al l over the worl d. More than 80% of pati ents wi th thi s cancer wi thin 5 years of d iagnosis lose thei r lives. In most of the cases. the cancer is usual ly diagnosed late. So i t is necessary to have a rel iable tool i n order to diagnosis the disease in the early stages. I n the present study for the d iagnosis and prognosis as well as for therapeutic targets. 5-gene panel was appl ied for study 011 lu ng surgery samplt:s.

M et h ods: Usi ng open surgery met hod, 60 fresh sumpl es of l u ng tissue were prepured from 30 patients wi t h p ul momiry d isease\ i ncl udi ng 30 specimens of l ung cancer tissue and 30 of 1101 ma! tissue adjacent to the tumor. Total RNA was isolated from the speci mens and a tier cDNA synthesis was used for qRT -PCR analysis.

Resu lts: The resul ts showed that the expression of 3 oncogenes; Bcl2, Src and Her2 in surgical speci mens of l ung cancer, signi ficantly ($p < 0.05$) have a higher expression than healthy l ung tissue.

Conclusion: Accord i ng to overal l resul ts of present study, it can be concl uded that l ung tissue abnormal i ti es, wi th the exception of cancer can lead to i ncreasi ng i n oncogenes overex pression. As v.el l as lung cancer i n both genders is almost equal spread.

KEYWOR DS: Lung Cancer, Oncogene, Gene Expression Proti \e, RT-PCR

I. INTRODUCTION

Oncogene is a type of m utant gene that i ts funct ion or expression cause abnormal stim ul ation of cel l division and proli feration. In addition to oncogene that its activati on causes the cancer, there are other genes that their mutations via d ifferent mechanism. i.e. the Joss of function of both al leles of gene, have a significant role in cancer occurrence. These genes are cal led tu mor suppresso r genes wh ich with plan n i ng the growth and acti vi ty of other cel l s cause cancer preventio n. DN A repai r genes are i ncluded the al l genes that i nvol ved i n the repai r of different DNA dam ages. These genes Provides the conditions to repair the damaged DNA by secretion of different proteins. Whenever these genes are damaged. the cells Joss their regeneration ability therefore genetic disorders and Jack of DN A repai r leads lo the cancer s i n men and women. al l over the worl d. More than 80% of patients wi th this cancer wi thi n 5 yea rs 01·diagnosis lose thei r l i ves. Lu ng cancer d isease emerged i n one or both of the lungs. (National Center for Health Statistics. 2012)

Some of the l ung d iseases at the begi nning occu r as simple inflammations. Based on the findings of investigations these intlam111atiolls may contain foci of premal ignant that can develop to l ung cancer later on. Lu ng d iseases which make the risk of l ung cancer is known by high and ilTegu lar inflam mations. (Version3.5.2. Bethesda. 201 l).

The genes wh ich were used to d etermine gene profiling, in th is project:

In the present study. it was attempted to confirm on the genes that play an important role in the cancel· occu rrence. As wel l as the level of gene expression was studied. In the following, some of these genes were represented and lheil· effects in different types of cancel·s were investigated and descri bed. These genes are i ncluded; Bc\2. Hel·-2.11eu. slc vegf l:rns that are appropriate targets for treatment. PActi n is a gene that always is expressed i n al l the cel l s. in the present research was appl ied as a control gene. Proto-oncogene Bcl-2 was encoded by a gene with 2301-.:- organ ic base which was used as a control gene and its product is a protei n with 26K Da molecular weight. Genes of Bc\2 family prod uct regu lator proteins that regu late program med cel l death (Apoptosis).This gene is a mem ber of a big fami ly and all of them have at least one of the four main area of the BH (Bcl2 homology). Main mem bers such as Bcl-2, Bel-xi and Mel l are Anti Apoptosis. and the rest of the mem bers such as Bax. Bak. and Bok

*Corresponding Author: P Boloori, Biology Department of Tofigh Daru & M Sc. Of Biochemistry, Department of Biology, Paya1111oor Un iversi ty, Teh ran. Iran