

EGFR gene amplification and ALK-EML4 gene inversion in Non-small cell Lung Cancer (NSCLC)

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ABSTRACT

An uncontrolled cellular growth or division in human body describes Cancer. Cancer is divided into two groups one is benign (which means unable to metastasize) and another is malignant (which means able to invade normal tissues). Cancer can affect in solid organ also like in breast and lung. There are some genes that are responsible to cause cancer, if alteration can occur in such type of genes. Like in lung cancer (adenocarcinoma), there is a gene named EGFR (Epidermal Growth Factor Receptor) and ALK-EML4 (Anaplastic Lymphoma Kinase-Echinoderm microtubule associated protein like 4). EGFR gene is located on a short (p) arm of human chromosome Number 7 at position 12. It is a cell surface protein that binds to epidermal growth factor. By binding a protein to a ligand may cause cell proliferation. Adenocarcinoma, the most common form of lung cancer. EGFR gene are present mainly in adenocarcinoma. It is also found in smokers & non-smokers as well as in women. The main cause found in non-smokers is exposure of Radon gas. ALK is an enzyme, also known as Alk tyrosine Kinase receptor. In human, it is encoded by the ALK gene. Non-small cell lung cancer includes a series of amplification, mutation or rearrangement of this gene. In the treatment of lung cancer, an EGFR inhibitor named **Erlotinib** shows a great survival benefit. An Alk inhibitor known as **Crizotinib**, is an anti-cancer drug.

Keywords: EGFR, ALK-EML4, NSCLC

