

Molecular Plasters to Fight with Cancer

Received: 15 December, 2016; Accepted: 23 December, 2016; Published: 25 December, 2016

Cancer is a life threatening serious illness and giving big challenge to treat it. In United States cancer is considered as second most common cause of death next to Cardiovascular Disease. The main cause of cancer is uncontrolled cell proliferation [1].

Cancer develops due to uncontrolled cell growth and later can metastasize to other parts of the body. All tumors are not cancerous. Tumors are of two types benign and malignant. Benign tumors are non cancerous and will not spread in to other parts of the body. Most common benign tumors are Adenomas, Meningiomas, Myomas, Hemangiomas, etc. Malignant tumors are cancerous and can spread to other parts of the body and complications may ensue. Most common malignancies are sarcomas and carcinomas [2].

Tumor Suppressor Genes [TSG] and Oncogenes play an important role in oncogenesis. Tumor Suppressor Genes will fight with cancer cells and act as check point for controlling the cell division and growth. Oncogenes will stimulate the cancer development.

P53 gene is a tumor suppressor gene and plays a crucial role in cell regulation and fight with cancer. P53 will protect the DNA from damage. It will stop the damaged cell growth by self killing of the damaged cells called as apoptosis or Programmed Cell Death [PCD]. So P53 gene will repair the DNA from cancerous damage every time [3].

If this P53 gene is mutated then it loses its ability to protect the DNA and fight with cancer. Scientists found that Y220C mutation (an amino acid Mutation called Y220C) is the main cause for inactivation of P53 gene stability. Y220C mutated P53 gene is having hole and this hole disturbs the molecular structure of P53 gene and hence hinders its stability as Tumor Suppressor Gene. This Y220C mutated hole, treated with molecular plasters can stabilize and reactivate the P53 gene [4].

References

1. Cancer and Emerging Trends. 2015; Available from: <http://www.symbiosisonlinepublishing.com/cancerscience-research/cancerscience-research16.php>
2. Ty Bollinger. Benign and Malignant Tumors: What is the Difference?. <https://thetruthaboutcancer.com/benign-malignant-tumors-difference/>
3. Jordan S Fridman, Scott W Lowe. Control of apoptosis by p53. *Oncogene*. 2003;22:9030-9040. doi:10.1038/sj.onc.1207116
4. Using a molecular 'plaster' to beat cancer. 2015; <http://www.worldwidecancerresearch.org/cancer-research-news/2015/molecular-plaster>