

Research Article

Cure a Cancer by using Caspase-3 Protein:

Umair Masood*

***Corresponding Author: Umair Masood**, Comsats University, Islamabad.

Received Date: April 11, 2021

Publication Date: April 14, 2021

We all start life as one single cell then the cell divides cells from tissues, tissues form organs and organs form a complete body system. Cancer is a group of diseases characterized by abnormal cell growth. In a healthy body, system cells grow and die normally in a very controlled way. Damage or change in the DNA of cells by environmental or internal factors. Sometime cells do not die and continue to multiply until a tumor or cancer develops. The most important and notable point is cancer is still the leading cause of death for people under the age of 85. For cancer treatment usually a combination of surgery to remove a tumor and sometimes chemotherapy and radiation to kill any types of cancer cells. Hormone therapies, Immunotherapy and cancer drug treatment for specific types of cancer. The intrinsic pathway will lead to the destruction of the cell that is the function of program cell death. When a cell goes any type of problem like DNA damages it tries to kill itself the process starts from the mitochondria the target is mitochondria, for example, DNA is damage that acts as a signal. Certain molecules are found inside the cell that sense the DNA damage some are proteins like ATM protein or CHK protein. The ATM and CHK activate a P53 and P53 are not allowed the cell to pass the next level of the cell cycle. P53 is started recruiting other proteins like Bax protein. Is a protein that can create pores in mitochondria after that mitochondria allow to release of cytochrome c from mitochondria to cytosol. Now the cytochrome c bind with a protein called A- paf1 they can activate the set of a protein called cascade reaction then cytochrome c and A-paf1 activated a caspase-9 and caspase-9 activated a caspase-3. The caspase-3 activated future nucleases enzyme and proteases enzyme after the activation of nucleases enzyme cell cannot survive. If we can deliver a caspase-3 protein in a cancerous cell by using different types of solute carrier the cell automatically activate nucleases enzyme nucleases find the DNA and start degrading the DNA and the cell cannot survive.

- Solute carrier and caspase-3 targeted anti-cancer Protein:

The solute carrier transporter expresses in cancer cells the main role is cellular uptake of cancer drug which may step toward anti-cancer-targeted drugs. The cell is surrounded by a cell membrane the main



point is how molecules pass in and out of the cell take the example Aspirin binding to the solute carrier is transported into the cell.

Solute carrier for cancer drug:

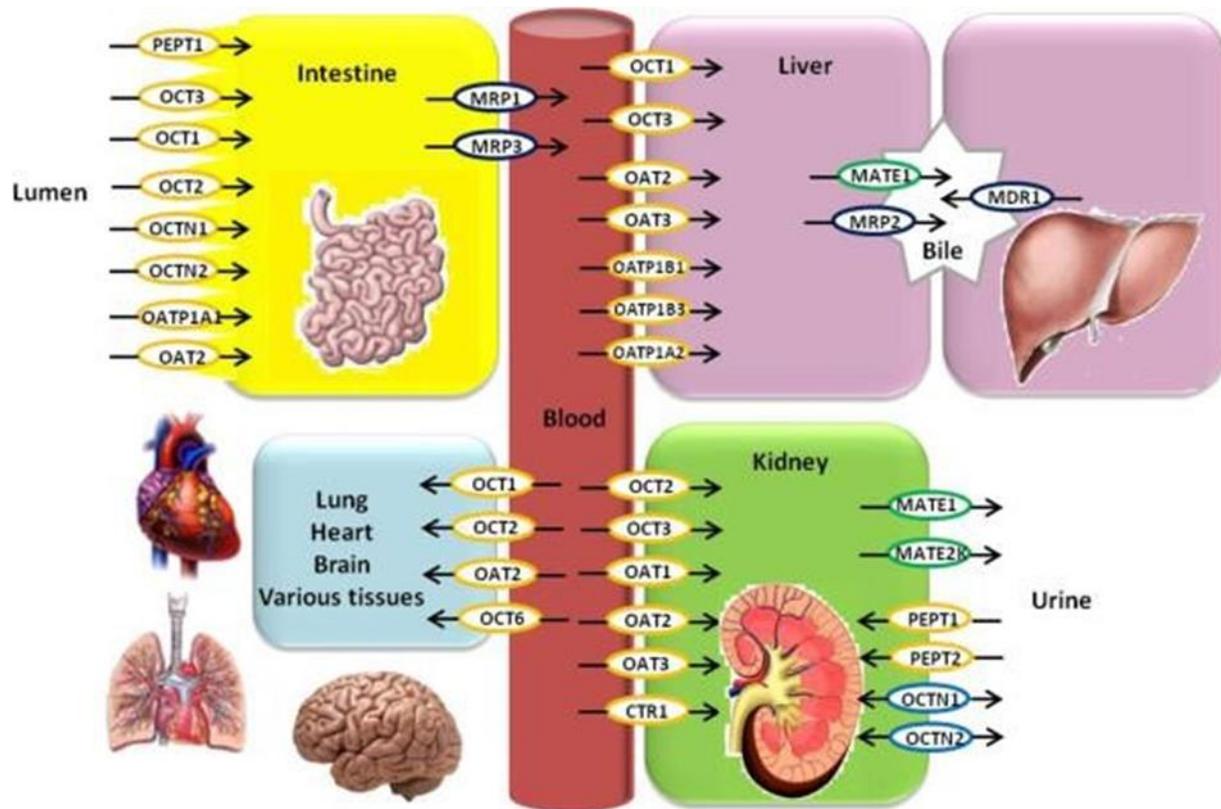


Figure 1

- Caspase-3 protein synthesis vector in bacteria:

The expression vector is usually plasmid for gene expression in the bacterial cell. The vector is used to initiate is a piece of the gene into the bacterial cell the gene carries all commands related to the protein synthesis.

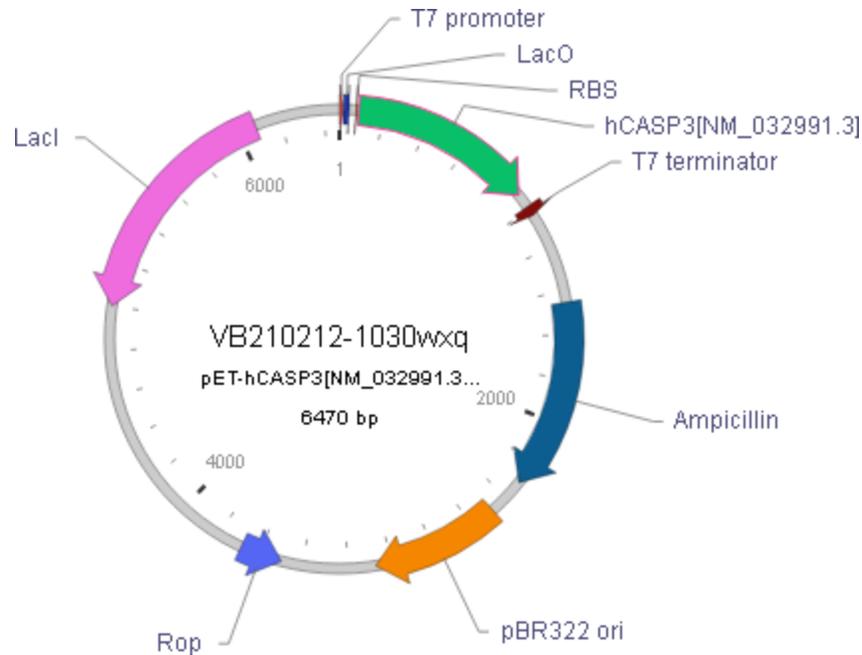


Figure 2

References

- 1.Venter JC, Adams MD, Myers EW, Li PW, Mural RJ, Sutton GG, Smith HO, Yandell M, Evans CA, Holt RA, Gocayne JD, Amanatides P, Ballew RM, Huson DH, Wortman JR, Zhang Q, Kodira CD, Zheng XH, Chen L, Skupski M, Subramanian G, Thomas PD, Zhang J, Gabor Miklos GL, Nelson C, Broder S, Clark AG, Nadeau J, McKusick VA, Zinder N, et al. "The sequence of the human genome". *Science*. 2001;291(5507):1304–1351. [PubMed] [Google Scholar]
- 2."Cancer – Signs and symptoms". NHS Choices. Archived from the original on 8 June 2014. Retrieved 10 June 2014
- 3.RW Old, SB Primrose (1994). "Chapter 8: Expression E. coli of cloned DNA molecules". *Principles of Gene Manipulation*. Blackwell Scientific Publications.

Volume 2 Issue 4 May 2021

©All rights reserved by Umair Masood