

INVENTION OF PERSONALIZED CANCER VACCINE BY EKIKE NTEKOP, JSS2, SARDONYX SCHOOL.

Cancer, a disease characterized by the uncontrolled growth of abnormal cells in the body, remains one of the leading causes of death worldwide. Having cancer touches every colony of one's life and the lives of those around you. Millions of people are diagnosed with cancer every year, and despite progress, it continues to claim countless number of lives; men, women and horrifyingly even children. According to International Agency for Research on Cancer (IARC); there were close to 20 million new cases of cancer in the year 2022 alongside 9.7 million deaths from cancer.

Conventional cancer treatments such as chemotherapy and radiation therapy have been brutal on patients and often have serious side effects and destroys both healthy and cancer cells. Chemotherapy, for instance causes nausea, Alopecia (hair loss), fatigue, and other side effects, depending on its impact on healthy cells. However, personalized cancer Vaccine are emerging as a novel approach that holds the promise of treating cancer effectively and efficiently. One thing I would like to invent is a personalized cancer Vaccine.

VACCINE DEVELOPMENT PROCESS

The development sequence of my invention is a multi-step process that specifically identifies a cancer patient's tumor DNA. It begins with the surgical removal of the patient's cancerous tissue, these cells are then analyzed for personalized proteins known as neoantigens. I will conduct a genomic sequencing, a process that reads information from tumor DNA to identify the specific neoantigens present in a patient's cancer. This information is crucial as these neoantigens are utilized to develop tailored Vaccine that target the unique nature of each tumor. I will then incorporate these neoantigens into Vaccine formulation using mRNA (messenger RNA) technology. mRNA contains instructions for producing proteins. In the case of cancer Vaccine, mRNA Vaccine will instruct the patient's immune system to recognize and attack cells expressing these specific neoantigens. This vaccine aims to be much more effective while decreasing the rate of collateral damage to healthy cells. This groundbreaking approach holds the key to treating various types of cancer, including leukemia (one of the most common childhood cancers) and breast cancer (the notorious one that has made many motherless) and any other cancer.

In conclusion, when my invention succeeds, a personalized cancer vaccine would replace traditional cancer treatments. My personalized cancer vaccine will represent a

groundbreaking advancement in the fight against cancer; giving a better survival rate and shorter treatment times. My invention will conquer cancer totally and make humanity happy by ensuring parents live long enough to raise their children and children will get the chance to make their unique contributions in bettering the world. This development will also lead to improvements in the treatment of other diseases and open a new time and chapter in medical science.