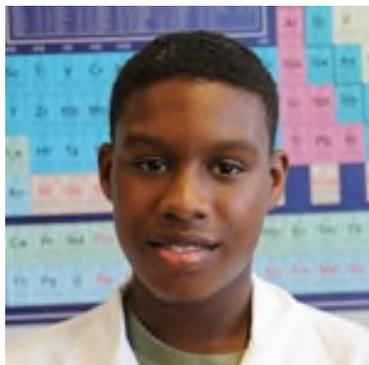


Student Scientist Investigates How Natural Antioxidants Found in Fruit and Spices Can Be Used to Treat Breast Cancer



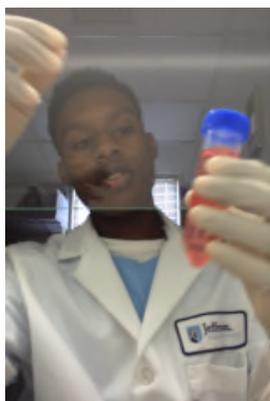
Breast cancer is a deadly disease that can strike women of all ages. According to the American Cancer Society breast cancer is the second leading cause of cancer death in women, exceeded only by lung cancer. It is estimated that about 232,670 new cases of invasive breast cancer will be diagnosed in 2014 and 40,000 women will die from the disease.

Breast cancer is the most common cancer among American women, except for skin cancers. Triple-negative breast cancer (TNBC) is a form of breast cancer in which tumor cells do not express the genes for oestrogen receptor, progesterone receptor and HER2 (also called ERBB2 or NEU). It is a highly aggressive malignancy with limited treatment options.

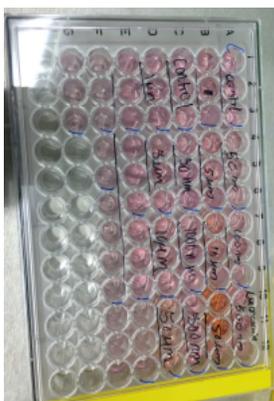
Scientists and researchers are working diligently to develop techniques and treatments that will increase the survival rate of women with TNBC. Malik Bassett, a 10th grader at Detroit Edison Early College of Excellence and a student scientist in the Ecotek Lab Program spent his summer (June 2014 to August 2014) working with researchers at Thomas Jefferson University in Philadelphia, Pennsylvania to perfect protocols for isolating and treating TNBC cells. Malik grew and isolated TNBC cell lines. He spent countless hours in the lab learning about the genetics of TNBC and how it forms in breast tissue.

He worked with Dr. Ashakumary Lakshmikuttyamma and Dr. Alok Bhushan, senior research scientists in the Department of Pharmaceutical Sciences, to find ways to inhibit the growth of TNBC cells using Quercetin and Curcumin. Quercetin is a flavonoid antioxidant found in pigmented fruits and vegetables (e.g. apples, berries). Curcumin is a substance found in turmeric, a spice commonly used in Asia.

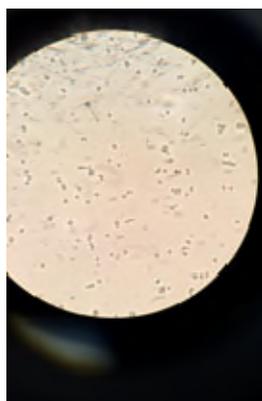
Malik was able to enhance his hands-on skills in the following areas: RNA Isolation, cDNA Preparation, and PCR amplification. He will continue his work this Fall on finding an effective treatment for TNBC. He is planning to spend his 10th grade summer at the National Institute of Health (NIH) in Bethesda, Maryland.



Malik isolating RNA from cancer cells under biohood



Triple negative breast cancer MTT assay



Magnified view of triple negative breast cancer cells



Flasks containing triple negative breast cancer cell culture

About the Ecotek Science Program

Ecotek is a science research lab program for young inventors and researchers in grades 5 thru 12. Student scientists work on projects aligned with the issues being addressed by world leaders at the United Nations. To learn more about Ecotek Lab go to <http://www.ecotek-us.com>