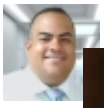
Quinones: cancer cell destroyers [1]

Submitted by Marcos Lopez [2] on 1 June 2007 - 12:00am



 [3]

Breast cancer cell

We have all been touched by this terrible illness. According to the American Cancer Society more than a half-million people die annually of cancer in the US. In Puerto Rico, the mortality rate is 5,000 patients per year, with a 2% increase each year.

Cancer results from uncontrollable cell proliferation, which leads to the formation of malignant tumors in different parts of the body. These tumors affect the physiological function of tissues and organs and are the target of cancer treatment.

One of the most effective cancer treatments relies on the use of compounds called quinones. Quinones are cytotoxic compounds, meaning that they kill cells. This is due to the fact that quinones catalyze chemical reactions that produce reactive oxygen species (ROS) and reactive nitrogen species (RNS) that kill cells. Quinones are used in chemotherapy to destroy cancer cells.

Unfortunately cytotoxic compounds such as quinones do not discriminate between malignant or healthy tissues, and it is for this reason that chemotherapy has terrible side effects such as hair loss and digestive track complications among others. It is in this topic that Dr. Antonio E. Alegría's (University of Puerto Rico (UPR), Humacao campus) is poised to make a difference. Dr.

Alegría's group studies the factors that affect the activity of quinones. By understanding these factors Dr. Alegría hopes to selectively control their cytotoxic activity and target it towards malignant cells and away from healthy tissues.

Dr. Alegría's research has yielded multiple publications and awards, including the **Igaravidez award**, given by the American Cancer Society, Puerto Rico chapter. Besides World class research, Dr. Alegría also helped create the UPR Humacao Biomedical Research Improvement Program, the first biomedical research program at UPR Humacao. Through this program multiple generations of Puerto Rican students have had the opportunity to train as research scientists.

If you want to learn more about Dr. Antonio Alegría research please visit the **MBRS program page** [4].

Tags:

- Antonio Alegría [5]
- cáncer [6]
- breast cancer [7]
- University of Puerto Rico - Humacao [8]
- UPR-Humacao [9]

Categorías de Contenido:

- Biological and health sciences [10]

Links
[1] https://www.cienciapr.org/en/monthly-story/quinones-cancer-cell-destroyers?language=en [2] https://www.cienciapr.org/en/user/marco4357?language=en [3] https://www.cienciapr.org/sites/cienciapr.org/files/field/image/cancer.jpg [4] http://www.uprh.edu/mbrs/ [5] https://www.cienciapr.org/en/tags/antonio-alegria?language=en [6] https://www.cienciapr.org/en/tags/cancer?language=en [7] https://www.cienciapr.org/en/tags/breast-cancer?language=en [8] https://www.cienciapr.org/en/tags/university-puerto-rico-humacao?language=en [9] https://www.cienciapr.org/en/tags/upr-humacao?language=en [10] https://www.cienciapr.org/en/categorias-de-contenido/biological-and-health-sciences-0?language=en