

Analyzing 17β -Estradiol Production in Ovarian And Muscle Cancer Cells as Antecedent to PS

Sarah Nichols, Seacoast School of Technology
New Hampshire Science Academy - 2016

Paraneoplastic syndrome affects 1 in 10,000,000 people per year. It is not yet known what causes paraneoplastic syndrome. Although possible causes include immune mediated mechanisms and antibody production, the most likely cause is abnormal endocrine or hormonal processes. In this study the abnormal secretion of hormones in cancer patients, which have neurological and physical effects on patients, was investigated. The purpose of this study was to determine the quantity of 17β -estradiol being produced in Chinese hamster ovary (CHO) and *Mus musculus* muscle cells. In the procedure CHO and mouse muscle cancer cells were grown and fed Ham's F-12 media. Following 95% confluency, the media was extracted and tested for the presence of 17β -estradiol using an ELISA. To culture the flasks, phosphate buffered saline (PBS) was added and the cells incubated for 24 hours. The PBS was also tested for the presence of 17β -estradiol. 17β -estradiol was not present in any of the CHO cell samples, but it was detected in the mouse muscle cells, which indicates the cancer cells are abnormally secreting this hormone.