Which Genes Cause Breast Cancer?

A Study of Chromosomal Aberrations with Differentially Expressed Genes that may Contribute to Breast Cancer Progression

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Abstract

There are many genes that, if mutated, will contribute to cancer progression. Chromosomal aberrations are locations on a chromosome that are abnormal. These locations may harbor mutated genes that are signaling wrong messages, too many messages, or no messages at all, disrupting a cell and leading it towards cancer. These genes are being differentially expressed, and their differential expression can be measured to see how significant it is. My project is to study differentially expressed genes at certain chromosome aberrations common in breast cancer. A website called the Cancer Genome Anatomy Project (CGAP) has extensive information about chromosomal aberrations and genes. The website is designed for cancer researchers, but is made available for the entire public to study cancer-causing genes.

I have used this site to obtain data on differentially expressed genes at certain aberrations in Breast Cancer. After analyzing which genes are severely different in breast cancer versus normal breast tissue, I have been able to observe certain genes that are highly differentially expressed in cancer tissues. My most striking finding is that ribosomal genes are frequently differentially expressed in cancer cells, meaning that ribosomal genes possibly contribute to cancer progression. In searching for a cure for cancer, findings such as this may open up new possibilities for drug targets to fight this most frightening of diseases.