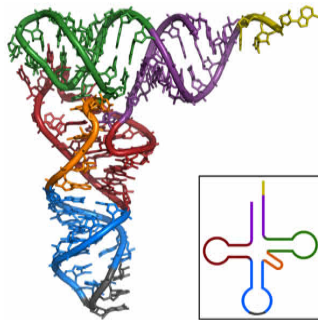

Pandora's Box of Cancer Biomarkers



Researchers at the University of Michigan Comprehensive Care Center have conducted a new analysis that could open the door to discovery of thousands of potential new cancer biomarkers.

The researchers analysed the long non-coding RNAs (lncRNAs) - a vast portion of the human genome that has not been well-explored before. It is believed that lncRNAs could play an important role in cancer and by understanding them better, it may be possible to identify new potential targets and improve cancer diagnosis, prognosis or treatment.

"We know about protein-coding genes, but that represents only 1-2 percent of the genome. Much less is known about the biology of the non-coding genome in terms of how it might function in a human disease like cancer," says senior study author Arul M. Chinnaiyan, M.D., Ph.D., director of the Michigan Center for Translational Pathology and S.P. Hicks Professor of Pathology at the University of Michigan Medical School.

The researchers pulled together 25 independent datasets totalling 7256 RNA sequencing samples from public sources including the Cancer Genome Atlas project and the Michigan Center for Translational Pathology's archives. They applied throughput RNA sequencing technology to identify more than 58,000 lncRNA genes across normal tissue and a range of cancer types.

The researchers used this data to decipher what the genomic landscape would look like in different tissues and in cancer. According Dr. Chinnaiyan, this opens up a Pandora's Box of all kinds of lncRNAs

One of the biomarkers that were identified during this analysis was SChLAP1 for aggressive prostate cancer. SChLAP1 was more highly expressed in metastatic prostate cancer than in the early stage of the disease. The biomarker was only found in prostate cancer cells and not in normal cells or other cancer cells. This suggests that a non-invasive test could be developed to detect SChLAP which could help both patients and doctors to make better treatment decisions for early stage prostate cancer.

The researchers believe that lncRNAs are a promising target for developing biomarkers and they are hoping to nominate lncRNAs for further study and development.

Source: University of Michigan Health System

Image Credit: Wikimedia Commons

Published on : Sat, 24 Jan 2015