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Editorial

Editorial on Cancer Biomarkers

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EDITORIAL

Cancer biomarkers can be used for the accurate evaluation and management of the disease in different stages. Biomarkers play an increasingly important role in the clinical management of cancer patients and they are molecules that indicate normal or abnormal process taking place in your body and may be a sign of an underlying condition or disease. They can be found in the blood, stool, urine, tumor tissue, or other tissues or bodily fluids. Notably, biomarkers are not limited to cancer and are also available for heart disease, multiple sclerosis, and many other diseases [1].

Different types of molecules, such as DNA (genes), proteins or hormones, can serve as biomarkers, since they all indicate something about your health.

Molecules like DNA, RNA and proteins are helpful for understanding the importance of biomarkers in cancer. DNA, which stands for deoxyribonucleic acid, is a molecule inside the cell that carries genetic information and passes it on from one generation to the next. RNA, or ribonucleic acid, contains information that has been copied from DNA. Body cells make several different types of RNA molecules that are necessary for the synthesis of protein molecules [2].

Proteins play many critical roles in the body and are the basis of body structures such as skin and hair. They have a wide range of functions inside the human body. Certain proteins speed up chemical reactions (enzymes), others affect the functioning of the immune system (cytokines), and yet others, known as antibodies, trigger specific immune responses in response to antigens – harmful substances that the body periodically has to overcome [3].

Cancer biomarkers can include: Proteins, Gene mutations (changes), Gene rearrangements, Extra copies of genes, Missing genes and other molecules.

There are different types of cancer biomarkers, and they each work differently within the body and react differently to treatments.

Cancer biomarkers are classified by their different functions:

1. Biomarkers that Trigger Cells to Grow and Multiply Abnormally
2. Biomarkers That Support a Treatment's Cellular or Molecular Action
3. Biomarkers That Disrupt a Treatment's Cellular or Molecular Action.

They used to predict how aggressively your cancer will grow, and are therefore useful for assessing your prognosis (outlook).

The most promising use of biomarkers today is to diagnose which therapies a particular patient's cancer may or may not respond to.

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