

*1/ Read carefully the texts then answer the questions that follow:*

Two of the main types of genes that play a role in cancer are oncogenes and tumor suppressor genes.

**Proto-oncogenes** are genes that normally help cells grow. When a proto-oncogene mutates (changes) or there are too many copies of it, it becomes a "bad" gene that can become permanently turned on or activated when it is not supposed to be. When this happens, the cell grows out of control, which can lead to cancer. This bad gene is called an oncogene.

It may be helpful to think of a cell as a car. For it to work properly, there need to be ways to control how fast it goes. A proto-oncogene normally functions in a way that is much like a gas pedal. It helps the cell grow and divide. An oncogene could be compared with a gas pedal that is stuck down, which causes the cell to divide out of control.

**A few cancer syndromes are caused by inherited mutations of proto-oncogenes** that cause the oncogene to be turned on (activated). But most cancer-causing mutations involving oncogenes are acquired, not inherited. They generally activate oncogenes by: Chromosome rearrangements -changes in chromosomes that put one gene next to another, which allows one gene to activate the other- and Gene duplication - Having extra copies of a gene, which can lead to making too much of a certain protein.

**Tumor suppressor** genes are normal genes that slow down cell division, repair DNA mistakes, or tell cells when to die (a process known as *apoptosis* or *programmed cell death*). When tumor suppressor genes don't work properly, cells can grow out of control, which can lead to cancer. A tumor suppressor gene is like the brake pedal on a car. It normally keeps the cell from dividing too quickly, just as a brake keeps a car from going too fast. When something goes wrong with the gene, such as a mutation, cell division can get out of control.

Inherited abnormalities of tumor suppressor genes have been found in some family cancer syndromes. They cause certain types of cancer to run in families. But most tumor suppressor gene mutations are acquired, not inherited.

### Questions

1- What is the basic role of proto oncogene and tumor suppressor before mutation occurs ?

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2- What do the author compare the functioning of Tumor suppressor gene with ?

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3- Do proto-oncogenes acquired or inherited ?

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4- What is the difference between prot- oncogenes and tumor suppressor?

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5- Turn the underlined sentence into active voice ?

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6- Pick up from the text one sentence with two verbs the second verb with a base form.

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7- Proto oncogene ..... a gas pedals. **put** in the gap **as** or **like**.

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