

# Cancer cell

**Cancer cells** are cells that grow and divide at an unregulated, quickened pace. Although cancer cells can be quite common in a person they are only malignant when the other cells (particularly natural killer cells) fail to recognize and/or destroy them.

In the past a common belief was that cancer cells failed to be recognized and destroyed because of a weakness in the immune system. However more recent research has shown that the failure to recognize cancer cells is caused by the lack of particular co-stimulated molecules that aid in the way antigens react with lymphocytes.

The metabolic program of cancer cells is significant different from the normal cells, which makes it possible to develop novel strategies targeting cancer cells. Mevalonate pathway and its rate-limiting enzyme HMG-CoA reductase (**HMGCR**) have shown important roles in the progression of several cancer types.

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**Cancer cells** acquire replicative **immortality** by activating a **telomere maintenance mechanism** (TMM), either the **telomerase** or the **Alternative Lengthening of Telomeres** (ALT) mechanism. ALT is frequently activated in tumors derived from **Mesenchymal stem cells**, which are more frequent in childhood cancers. Studies showed that, occasionally, cancer cells can arise without any TMM activation. <sup>1)</sup>

<sup>1)</sup>

Claude E, Decottignies A. Telomere maintenance mechanisms in cancer: telomerase, ALT or lack thereof. *Curr Opin Genet Dev.* 2020 Feb;60:1-8. doi: 10.1016/j.gde.2020.01.002. Epub 2020 Feb 27. PMID: 32114293.

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