



Monoclonal antibody drugs for cancer

Stefan Hohaus*

Department of Medicine, University of Perugia, Terni, Italy.

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DESCRIPTION

Monoclonal antibodies are laboratory produced molecules engineered to serve as substitute antibodies that can restore, enhance, modify or mimic the immune system's attack on cells that aren't wanted, such as cancer cells. They can have monovalent affinity, binding only to the same epitope (the part of an antigen that is recognized by the antibody). In contrast, polyclonal antibodies bind to multiple epitopes and are usually made by several different antibody secreting plasma cell lineages. Specific monoclonal antibodies can also be engineered, by increasing the therapeutic targets of one monoclonal antibody to two epitopes. Monoclonal antibody drugs are treatments that enlist your body's germ fighting immune system against diseases, including cancer.

If your health care provider recommends a monoclonal antibody drug as part of your cancer treatment, find out what to expect from this therapy. Learn enough about monoclonal antibody drugs so that you feel comfortable asking questions and making decisions about your treatment. Work with your health care provider to decide whether a monoclonal antibody treatment may be right for you. It is possible to produce monoclonal antibodies that specifically bind to virtually any suitable substance; they can then serve to detect or purify it.

This capability has become an important tool in biochemistry, molecular biology, and medicine. At the clinical level, monoclonal antibodies are used both in the diagnosis and treatment of various diseases.

Monoclonal antibody drugs used in cancer treatment

Many monoclonal antibodies are approved for the treatment of many different types of cancer. Clinical trials will explore new drugs and new uses for existing monoclonal antibodies. Monoclonal antibody is given inside (intravenously). The frequency of receiving monoclonal antibody therapy depends on the cancer and the drug being given. Some monoclonal antibody drugs may be used in combination with other treatments, such as chemotherapy or hormone therapy. Some monoclonal antibody drugs are a part of standard treatment plans. Others are still experimental and used when other treatments have not been successful. Monoclonal antibody based immunotherapy is now considered to be a main component of cancer therapy, alongside surgery, radiation, and chemotherapy. Monoclonal antibodies possess a diverse set of clinically relevant mechanisms of action. In addition, antibodies can directly target tumor cells while simultaneously promoting the induction of long lasting antitumor immune responses. The multifaceted properties of antibodies as a therapeutic platform have led to the development of new cancer treatment strategies that will have major impacts on cancer care.

Blocking cell growth

Some monoclonal antibodies block the connection between a cancer cell and proteins that promote cell growth- an activity that is necessary for cancer growth and survival.

Preventing blood vessel growth

A blood supply is required for a malignant tumor to grow and survive. Some monoclonal antibody drugs block protein-cell interactions required for the development of new blood vessels.

Certain monoclonal antibodies can attack cells more directly. When some of these antibodies bind to a cell, a series of intracellular events can cause the cell to self-destruct. Monoclonal antibodies can bind to cancer cells and the antibodies

Blocks immune system inhibitors

Your body prevents the immune system from becoming overactive by making proteins that control the activity of immune system cells. Monoclonal antibodies interfere with this process, allowing cells of the immune system to work out of control against cancer cells.