

Old Dominion University

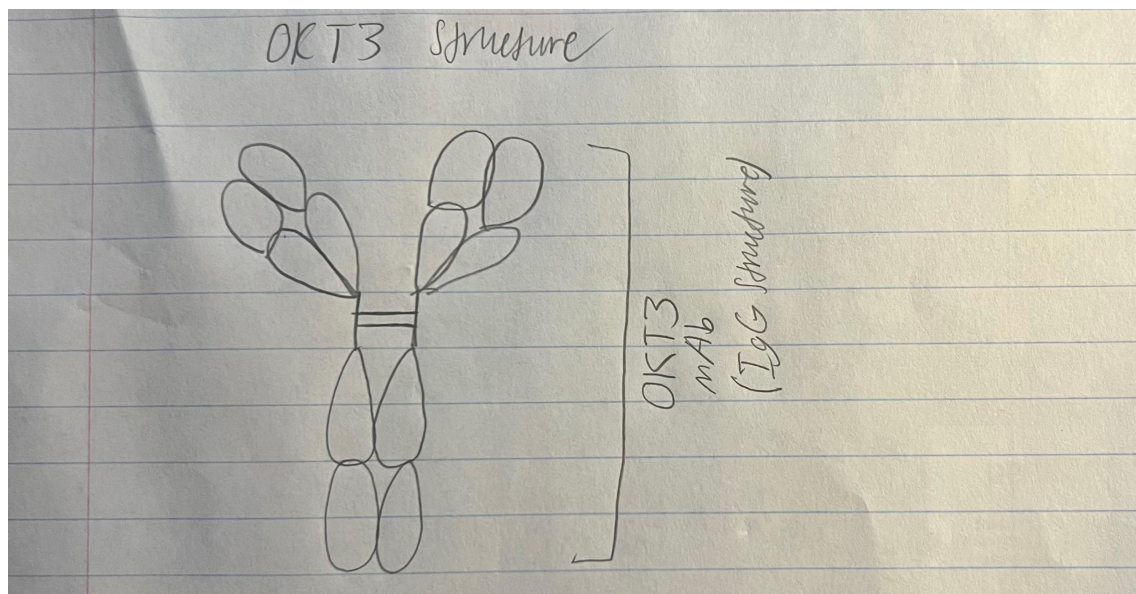
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-mAb Drug Report

The monoclonal antibody that I have chosen is called an “Anti-CD3 monoclonal antibody.” The more common drug name is called the “Orthoclone OKT 3.” Muromonab-CD3 is a mAb drug that is used for treatment of transplant rejections for most people. More specifically, it is used to help treat kidney transplants. Transplant rejection is a health condition where one person will get a transplanted organ from another person and their body will start to attack the foreign organ. When this happens it can cause major immune system activation and cause the newly transplanted organ to be attacked and possibly shut down. This monoclonal antibody acts as an “immunosuppressive” to help keep the immune system from overreacting to the foreign organ. Additionally, it also helps to alleviate certain autoimmune conditions. Now according to “The Mayo Clinic” it states “when using this drug, it is considered “risky” because since it is an immunosuppressive drug, it will also reduce the effectiveness of the body’s natural immune system which means that patients will sometimes be exposed to more types of infection or “opportunistic infections.” (2023) Lastly, this mAb drug is an IgG type of a monoclonal antibody drug.

Now, this drug is able to help alleviate the effects of transplant rejections because of its ability to act as an immunosuppressive drug. It does this by binding to a variety of T cells within the immune system. It is able to bind to T cells by binding the CD3 region on the surface of a T-cell's receptors. Once it is binded, it can induce a chemical signal where the activated T-cell will induce apoptosis to prevent too many T-cells from being activated. However, it can also bind to the CD3 region of a T-cell and cause the T-cell to not be allowed to activate. Now, when this mAb drug is preventing the activation of multiple T-cells, it would lower the overall amount of T-cells from doing their function in carrying out the immune response against the foreign organ. This would then in turn cause less transplant rejection, as well as most types of autoimmune condition symptoms to show up like reduced organ function, inflammation, etc. However, with this new low number of activated T-cells, opportunistic infections could be more prevalent in patients with this treatment.



Reference Page

Mayo Foundation for Medical Education and Research. (2023, January 1). *Muromonab-Cd3 (intravenous route) description and brand names*. Mayo Clinic. Retrieved February 5, 2023, from <https://www.mayoclinic.org/drugs-supplements/muromonab-cd3-intravenous-route/description/drg-20064931>