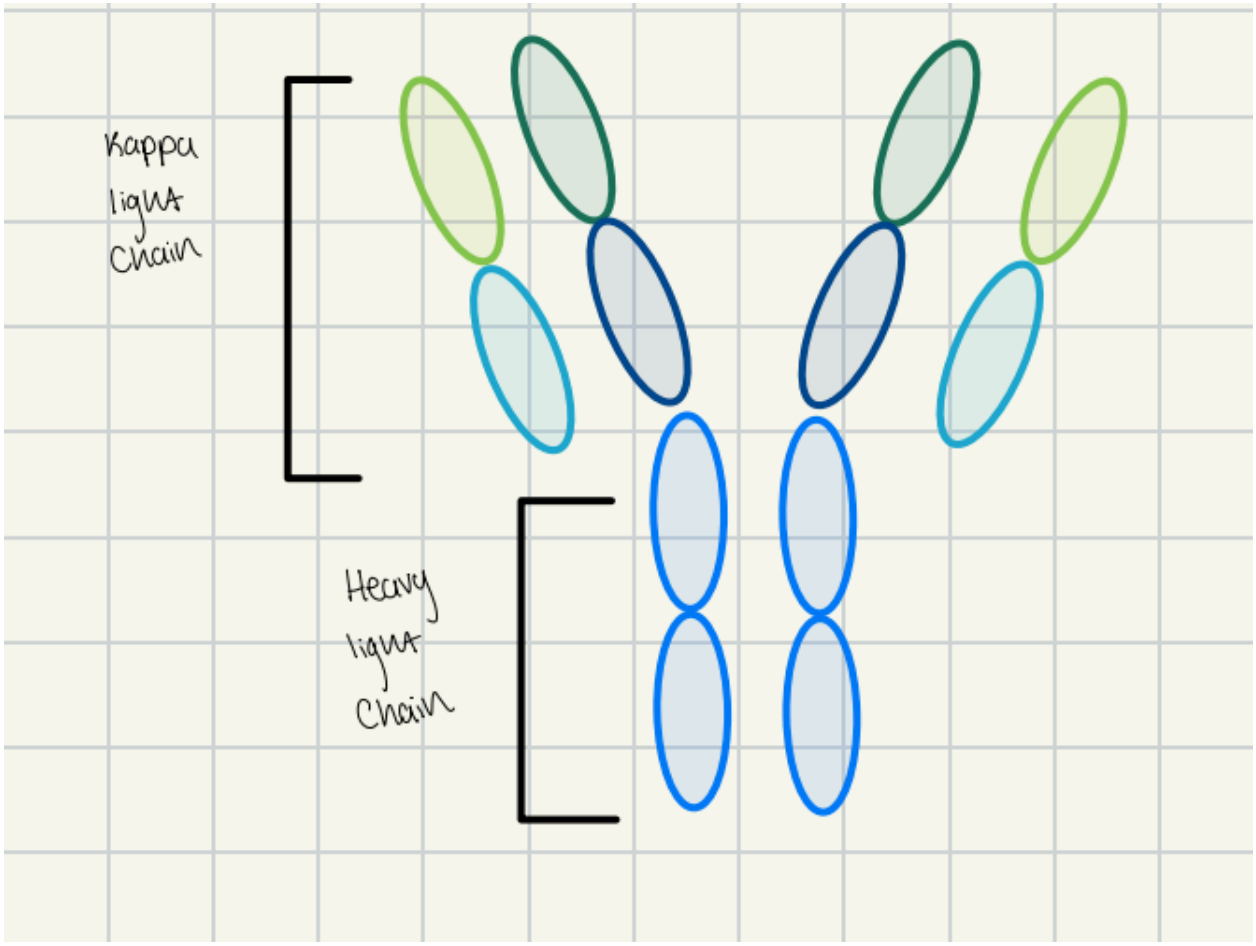
Sotrovimab (brand name Xevudy) is a monoclonal antibody used in the treatment of COVID-19, a viral infection caused by the SARS-CoV-2 virus. Different variants of the SARS-CoV-2 virus have emerged over time, including Alpha, Beta, Gamma, Delta and Omicron, each with unique mutations that impact transmissibility, disease severity, and immunity evasions. Sotrovimab was effective against the Delta, Omicron BA.1 and early Omicron BA.2 variants of COVID-19. COVID-19 presents with a wide range of symptoms from mild to severe and this drug was developed to treat patients with mild to moderate cases of COVID-19 who are at high risk for progressing to severe disease or hospitalization. COVID-19 primarily affects the respiratory system, causing symptoms that range from mild, such as fever, cough, and fatigue, sore throat, fatigue, muscle aches, loss of taste or smell to severe, including difficulty breathing, pneumonia, and acute respiratory distress syndrome. COVID-19 spreads primarily through respiratory droplets when an infected person coughs, sneezes, or talks. This drug is usually administered intravenously. This drug is in a class of therapies known as neutralizing monoclonal antibodies. Once the virus enters the body, it binds to ACE2 receptors on human cells, particularly in the lungs, allowing it to replicate and cause inflammation. In severe cases, this inflammation leads to respiratory failure and other serious complications. It has been granted emergency use authorization (EUA) in various countries for the treatment of COVID-19, particularly for patients who are not hospitalized and do not require supplemental oxygen. This drug was previously approved by the U.S. Food and Drug Administration (FDA) to treat COVID-19 but was revoked in 2022 because the drug was shown to have little to no effect on COVID-19 cases caused by the Omicron BA.2 sub variant. This drug has been proven to be effective in reducing the progression of COVID-19 symptoms, especially in individuals who are

at risk due to conditions such as people over the age of 65, obesity, diabetes, heart disease, chronic lung disease, kidney disease or immune suppression.

Sotrovimab is an antibody treatment that targets and binds to the spike protein of the SARS-CoV-2 virus, which causes COVID-19. The spike proteins interact with the ACE2 receptor on the surface of human cells, enabling the virus to enter and replicate. By blocking this interaction, sotrovimab prevents the virus from entering human cells, thus inhibiting the initial step of its replication. This action reduces the virus's ability to multiply and lowers the viral load in the body, which can decrease the severity of the disease and prevent complications such as respiratory failure. As a result, sotrovimab can help slow down or prevent the worsening of symptoms associated with COVID-19. By neutralizing the virus, it also helps stop the spread of the virus to other cells and tissues. This limitation on viral spread reduces the likelihood of severe respiratory symptoms, including pneumonia, low oxygen levels in the blood (hypoxia), and acute respiratory distress syndrome (ARDS), which can lead to hospitalization or even death. Sotrovimab is most effective when administered early in the course of infection, ideally within five days of the onset of symptoms. Clinical trials have demonstrated a significant reduction in the risk of hospitalization and death among high-risk patients, highlighting its potential to help control the spread and impact of COVID-19. Additionally, the antibody can alleviate symptoms such as fever, cough, and fatigue by reducing the virus's ability to replicate, thereby shortening the duration of illness and decreasing the risk of severe disease, hospitalization, or death in at-risk individuals.

Sotrovimab is an IgG monoclonal antibody. Specifically, it is an IgG1-kappa monoclonal antibody, which is one of the most common types of antibodies in the human immune system. This antibody consists of two identical light-chain polypeptides, each composed of 214 amino

acids, and two identical heavy-chain polypeptides, each composed of 457 amino acids.



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