Pertuzumab: The Monoclonal Antibody Drug to Fight Breast Cancer

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Monoclonal antibodies have great benefits in the treatment of many types of cancer. There are numerous monoclonal antibodies; one example is Pertuzumab, a drug used to treat breast cancer. (2) Breast cancer affects many patients around the world; drugs such as Pertuzumab along with other drugs can halt progression of the cancer.

This drug was approved by the FDA in 2012 to be released under the manufacturer Genentech. (1) It falls under the antibody class IgG with kappa light chains. (2) A representation of the Pertuzumab molecule can be found on Figure 1.

When considering the mechanisms of action for pertuzumab, it is first important to consider the immunological factors that come into play when a patient is diagnosed with breast cancer. Breast cancer results from overproduction of a growth factor receptor known as HER2. (3) HER2 is just one member of multiple types of HER receptors, including HER1 and HER3.

The goal of taking Pertuzumab is to stop HER receptors from binding to each other and ultimately multiplying. When Pertuzumab enters the body, it attaches to the HER2 receptor, and the HER2 receptor is blocked from combining with other HERs- therefore preventing an overproduction of these receptors. (3)

When taking this drug, Pertuzumab is first introduced intravenously with one injection of 840 mg, and after that, subsequent 420 mg intravenous doses once every 3 weeks. (4) Side effects of taking this drug are rarely severe, and tend to mostly affect patients with cardiac diseases, with the most severe symptom being cardiac toxicity. (3)

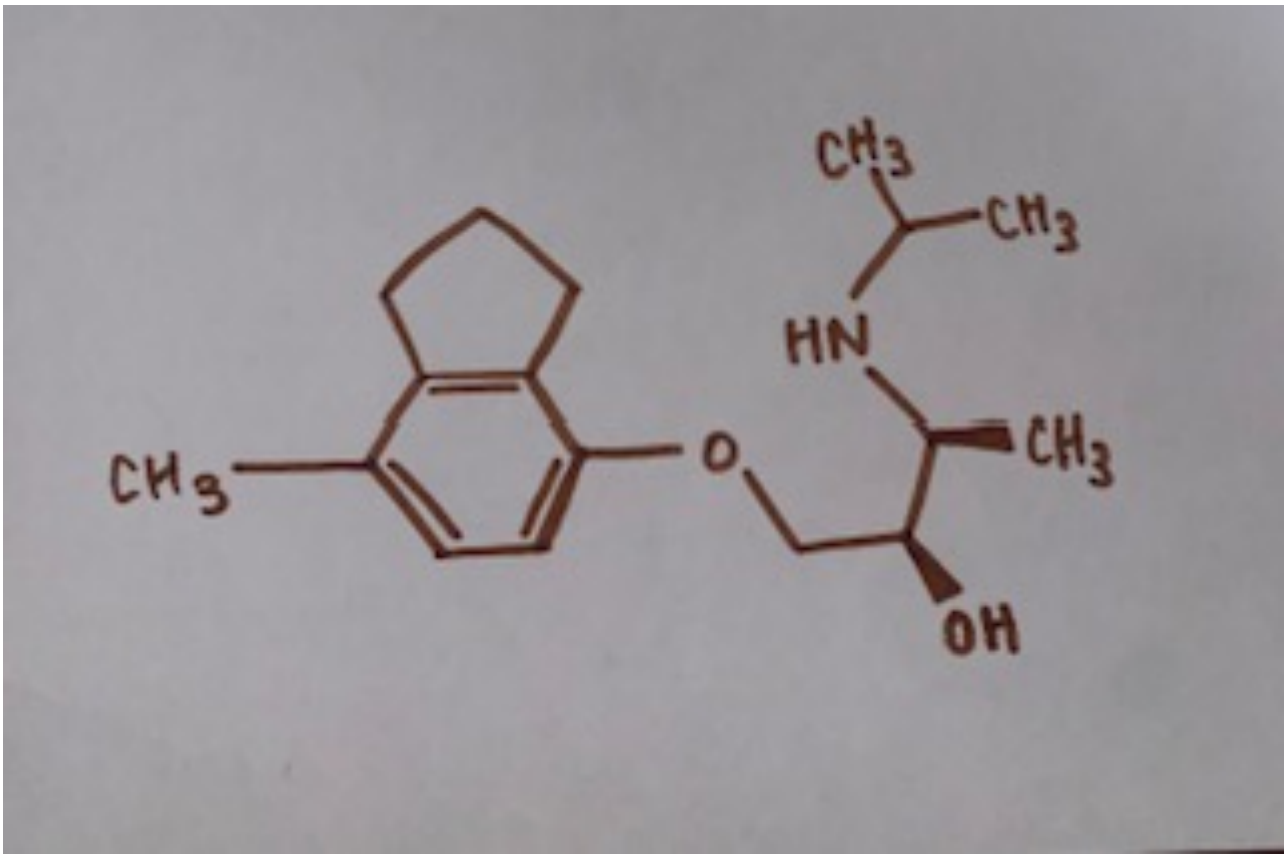

Figure 1: Image depicting a Pertuzumab molecule.

References

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