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Rituximab and biosimilars – Equivalence and reciprocity

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Abstract

Cancer is a debilitating disease affecting millions of people daily. Over the years cancer treatment has advanced in leaps and bounds. Antibodies are important breakthrough therapeutic agents for cancer. These agents, proteins produced by B lymphocytes of the immune system in response to antigens, bind to receptors on cell surfaces so that the antigen-antibody complexes can be recognized and destroyed by phagocytes. While each B cell synthesizes only one kind of antibody, an entire population of different types of B cells and their respective antibodies are produced in response to various antigens to which the organism had been exposed. However to be useful clinically, substantial amounts of a single antibody must be generated from a single ancestral B cell. The population of antibodies produced by a specific population of B cells is the monoclonal antibodies that have become the cornerstone of treatment for cancer and many immunologic illnesses. The purpose of this report is to provide an overview of the clinical development of biosimilars in clinical oncology focusing on rituximab and like biosimilars.