Anti-CD20 Monoclonal Antibody-Interferon-alpha Fusion Protein IGN002

National Cancer Institute

Source

National Cancer Institute. Anti-CD20 Monoclonal Antibody-Interferon-alpha Fusion Protein IGN002. NCI Thesaurus. Code C123915.

A humanized monoclonal antibody directed against the human B-cell-specific cell surface antigen CD20 and fused to the recombinant cytokine, interferon-alpha (IFN-a), with potential antineoplastic and immunomodulating activities. Upon administration of anti-CD20 monoclonal antibody-interferon alpha fusion protein IGN002, the antibody moiety specifically targets and binds to CD20. In turn, the IFN-a moiety binds to the IFN receptor, and activates IFN-mediated signal transduction, which induces the transcription and translation of genes whose protein products mediate anticancer effects. This results in the induction of both G2 cell cycle arrest and apoptosis in CD20-expressing tumor cells. In addition, IGN002 causes the induction of complement-dependent cytotoxicity (CDC) and antibody-dependent cell-mediated cytotoxicity (ADCC) against CD20-expressing B-cells, which leads to B-cell apoptosis and the inhibition of tumor cell proliferation. CD20, a non-glycosylated cell surface phosphoprotein that is exclusively expressed on B-cells during most stages of B-cell development, is often overexpressed in B-cell malignancies.