Anti-CD19 Antibody-drug Conjugate SGN-CD19B

National Cancer Institute

Source

National Cancer Institute. Anti-CD19 Antibody-drug Conjugate SGN-CD19B. NCI Thesaurus. Code C126377.

An antibody-drug conjugate (ADC) consisting of an anti-CD19 humanized monoclonal antibody (hBU12ec) with engineered cysteines (EC-mAb) conjugated, via a maleimidocaproyl-valine-alanine dipeptide protease-cleavable linker, to the cytotoxic, DNA minor-groove crosslinking agent pyrrolobenzodiazepine (PBD) dimer (SGD-1882), with potential antineoplastic activity. Upon administration of anti-CD19 ADC SGN-CD19B, the antibody moiety targets the cell surface antigen CD19, which is found on B-cell-derived cancers. Upon antibody/antigen binding, internalization and lysosome uptake, the cytotoxic PBD moiety is released. In turn, the imine groups of the PBD moiety bind to the N2 positions of guanines on opposite strands of DNA. This induces DNA strand breaks, inhibits DNA replication, leads to G2/M cell cycle arrest, induces cell death, and inhibits the proliferation of CD19-overexpressing tumor cells. CD19, a transmembrane receptor belonging to the immunoglobulin superfamily and a B-cell specific antigen, is expressed on B-cell-derived cancers. The cysteine engineering of the EC-mAb allows for a site-specific and stable conjugation of PBD to the antibody.