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Anti-CD47 Monoclonal Antibody Hu5F9-G4

National Cancer Institute

Source

National Cancer Institute. *Anti-CD47 Monoclonal Antibody Hu5F9-G4*. NCI Thesaurus. Code C117730.

A humanized monoclonal antibody targeting the human cell surface antigen CD47, with potential immunostimulating and antineoplastic activities. Upon administration, anti-CD47 monoclonal antibody Hu5F9-G4 selectively binds to CD47 expressed on tumor cells and blocks the interaction of CD47 with its ligand signal regulatory protein alpha (SIRPa), a protein expressed on phagocytic cells. This prevents CD47/SIRPa-mediated signaling, allows the activation of macrophages, through the induction of pro-phagocytic signaling mediated by calreticulin, which is specifically expressed on the surface of tumor cells, and results in specific tumor cell phagocytosis. In addition, blocking CD47 signaling activates an anti-tumor T-lymphocyte immune response and T-mediated cell killing. CD47, a tumor associated antigen expressed on normal, healthy hematopoietic stem cells (HSC), is overexpressed on the surface of a variety of cancer cells. Expression of CD47, and interaction with SIRP-alpha, leads to inhibition of macrophages and protects cancer cells from phagocytosis thereby allowing cancer cells to proliferate.