B16alphaGal Melanoma Vaccine

National Cancer Institute

Source

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A whole cell melanoma cancer vaccine with potential immunostimulating and antineoplastic activities. B16alphaGal melanoma vaccine contains three types of human melanoma cell lines that are genetically engineered to express the alpha(1,3)-galactosyl (alphaGal) epitope on cell surfaces. The agent stimulates a hyperacute rejection of whole melanoma cancer cells expressing alphaGal epitopes, initiated by opsonization by anti-alphaGal antibodies and followed by antibody-dependent cell-mediated cytotoxicity (ADCC) and cell lysis. This results in the stimulation of a broader cytotoxic T-lymphocyte response (CTL) directed against tumor antigens on melanoma cells that do not express alphaGal. AlphaGal is not normally expressed in humans because alpha(1,3)-galactosyltransferase (Alpha-GT), the enzyme that catalyzes the synthesis of alphaGal epitopes on glycoproteins and glycolipids, is not naturally present in humans and other primates.