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Liposomal MUC1/PET-lipid A Vaccine ONT-10

National Cancer Institute

Source

National Cancer Institute. *Liposomal MUC1/PET-lipid A Vaccine ONT-10*. NCI Thesaurus. Code C101262.

A cancer vaccine comprised of a 43 amino acid epitope from glycoprotein MUC1 (mucin 1) and the synthetic Toll-like receptor 4 (TLR-4) agonist PET lipid A encapsulated in cholesterol/dipalmitoylphosphatidylcholine (DPPC)/dimyristoylphosphatidylglycerol (DMPG) liposomes, with potential immunostimulatory and antineoplastic activities. The MUC1 epitope is composed of two 20 amino glycosylated VNTR (various number tandem repeats) from human MUC1A and including 6 glycosylated sites modified by Tn (alpha-N-acetyl-D-galactosamine). Immunization of liposomal MUC1/PET-lipid A vaccine ONT-10 results in an antibody as well as a cytotoxic T-lymphocyte (CTL) response against hypoglycosylated MUC1 expressing tumor cells. The tumor associated antigen MUC1, a type I transmembrane protein, is overexpressed and aberrantly glycosylated in a variety of tumor cells. As a vaccine adjuvant, PET lipid A, also known as penta erythritol lipid A, stimulates both cellular and humoral responses to the vaccine antigen.