Anti-MUC1 antibodies from human sera

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Technology description

Background Mucin 1 (MUC1) is a transmembrane protein of the mucin family, which is heavily glycosylated in its extracellular domain and is characterized by polarized expression on apical epithelial cell surfaces. In diverse cancer types, e.g., epithelial adenocarcinomas, MUC1 is overexpressed, the expression pattern loses its polarity, and it is aberrantly underglycosylated. Therefore, the abnormal MUC1 form has been considered as a therapeutic target for treatment of cancer. **Technology** The innovators have come up with a novel approach that results in the isolation of human antibodies that are already known to be safe and specific for the tumor antigen MUC1. The innovators were able to clone anti-MUC1 antibodies from healthy individuals who are at risk for developing colon cancer and who were immunized against MUC1 with a MUC1 peptide vaccine. These individuals are a unique source of high quality of anti-MUC1 (anti-tumor) antibodies produced in healthy individuals whose immune responses were not compromised by cancer. In five years of observation, the individuals have shown no side effects. Can be used for therapeutic and diagnostic purposes for cancers expressing abnormal form of MUC1 (pancreatic, colon, liver, ovarian, among others). 1. Made by healthy humans 2. Derived from the only cancer prevention vaccine trial in the world and the only group of healthy individuals in the world immunized against MUC1 3. Known to be safe because people from whom they were cloned have no adverse effects of having these antibodies in circulation 4. High affinity 5. Specific for epitopes previously shown to be expressed only on tumor MUC1 In vitro data PCT Applications Filed

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