



New Licensing Opportunity

Use of O-linked oligosaccharide (O-glycan) compositions to treat Inflammatory Bowel Disease (IBD) & Colorectal Cancer



Dr. Lijun Xia

Components of Invention:

1. Prophylactic (as Food Supplement) and Therapeutic compound to prevent/treat IBD and Colorectal Cancers
2. Novel mouse models for IBD research

Inventor: Dr. Lijun Xia

Patent Information: US Provisional patent application filed. Pursuing foreign applications

Background: IBD is an immune-mediated disorder resulting from abnormal interaction between microflora and mucosal immune cells in the intestine of individuals who are genetically susceptible to such disorder. IBD is painful and could increase the risk for colorectal cancer.

O-glycans are primary components of intestinal mucus gel layer. Mucin is the primary component of mucus layer, 80% of which is made of O-glycans. IBD and colorectal cancer patients exhibit altered or depleted intestinal O-glycan expression.

Prophylactic/Therapeutic Component of Invention: Provides methods for treating IBD (like Crohn's disease/Ulcerative Colitis) and gastrointestinal tumors/cancers by administering purified O-glycan compositions (e.g. Mucins).

Prophylactic Use: This technology has the important potential for prophylactic use. A major application targeted by this technology is to provide Mucins as food supplements to prevent the occurrence of IBD, and potential colorectal cancer in IBD patients. This prophylactic use could be extremely valuable from a nutraceutical perspective.

Therapeutic Use: Treatment of IBD patients using

pharmaceutical formulations to release O-glycan compositions in small or large intestines is an extremely valuable use for this technology. Also, it could be safely used in combination with other treatments (like antibiotics) in the case of chronic incidents.

Disadvantages of Traditional Approach: No effective treatment currently available for IBD and gastrointestinal cancers. All available drugs have high negative side effects, and do not completely cure the disease. Surgical removal of diseased colon is the only complete cure for most IBD.

Advantages of OMRF Invention: Drug developed using this technology will potentially be safe (no negative side effects) and non-invasive (oral administration). O-glycan compositions (Mucins) could be obtained and purified from natural sources (like from animal colon), and hence, could be safe for human use.

Stage of Development of Technology: Animal data available. Studies conducted in transgenic IBD mouse models. Technology is ready for aggressive development. We are seeking licensing/research partners to bring this to market.

Research Tool Component of Invention: OMRF's IBD mouse models developed as a part of this technology show different degrees of spontaneous IBD that is characteristically located in distal colon. It occurs with all clinical and pathological features found in the human disease. Thus, these mice provide an excellent model system to examine not only the role of O-glycans in IBD, but also the nature of the abnormal immune response in colitis.



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A Cure Is Out There