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Agonistic TrkB Antibody for Glaucoma Treatment

Overview

McGill University is seeking a company interested in commercializing 1D7, an agonistic TrkB monoclonal antibody (mAb) for the treatment of Glaucoma. Glaucoma is the second largest cause of blindness worldwide. In 2008, there were 14.7 million people affected with Glaucoma in the seven major markets and the prevalence of this disease is expected to remain stable. Anti-glaucoma preparations posted 5.2 billion dollars in sales in 2008. Therapies for Glaucoma consist primarily of agents that decrease Intra-ocular pressure (IOP). 1D7 is an alternative neuroprotective approach to disease treatment.

Application

Novel treatment approach for glaucoma based on monoclonal antibody therapy

Advantages

- Offers a competitive advantage over alternative therapies as it targets the TrkB receptor a new mechanism of action centered on protecting retinal cells from damage
- Improves treatment options before surgery as this therapeutic antibody may potentially be used in combination with existing Intraocular pressure lowering agents.
- Long patent life—most therapeutics presently on the market will come off patent in the next 4 years.

Technology

Brain derived neurotrophic factor (BDNF) receptors, TrkB and p75NTR, are expressed in the retina. However, exogenous BDNF does not provide retinal ganglion cells (RGCs) with long-lasting neuroprotection *in vivo* during optic nerve axotomy or glaucoma rat models of neurodegeneration. The Inventors have identified a monoclonal antibody 1D7, specific for the D2-D3 domain of TrkB, which has agonistic activity. 1D7 mAb affords long-lived TrkB activation, and delayed RGC death in rat models of acute and chronic retinal injury *in vivo*. Importantly, using non-invasive retinal imaging the inventor shows that treatment with 1D7 preserves the retinal structure and in particular maintains the layers consisting of neurons and neuronal fibers in both the optic nerve axotomy (acute) and Glaucoma (Chronic) animal models.

The Inventors



Dr. Uri Saragovi is currently an Associate Professor in the Departments of Oncology and Pharmacology & Therapeutics in McGill University's Faculty of Medicine. Dr. Saragovi is also a Research Scientist at the Lady Davis Institute for Medical Research and the Segal Cancer Center of the Sir Mortimer B. Davis-Jewish General Hospital. Dr. Saragovi obtained his PhD from the University of Miami. His research focuses on elucidating receptor-ligand interactions and translating this knowledge into the development of experimental therapeutics.

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Opportunity: Exclusive license or research collaboration



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