Sustained Delivery of Timolol Maleate for Management of Elevated IOP for Glaucoma

**OCR Number:** OCR 4337

**Description:**

Glaucoma is the second leading cause of blindness in the world, and the risk for developing the disease increases with age. It is associated with a rise in intraocular pressure (IOP), the reduction of which can usually preserve vision. While effective IOP-lowering medications are available, they require continuous administration, up to several times per day in some cases. Non-compliance with glaucoma medications is very high among elderly patients, (23% in a study of 2440 patients over the age of 65) with frequent administration requirements strongly associated with nonadherence. This novel treatment addresses the large and growing compliance issue with a sustained delivery timolol maleate injection. With the possibility of administration once every few months at routine doctor’s visits, daily compliance is negated.

Advantages: Timolol release over 90 days has been shown, by far the longest delivery in the published literature. Timolol maleate has a long therapeutic history in lowering IOP and has been used extensively for 30 years. Injections are generally well-tolerated and avoid the discomfort associated with inserts. Local sustained delivery can also lower required dosages in certain cases.

Value Proposition: An estimated 67 million people worldwide and 2.2 million in the U.S. have glaucoma. Glaucoma therapeutics is currently a $3.8 billion market with 4% growth per year. No sustained delivery IOP-lowering injections are currently available.

**Stage of Development:** Small animal studies show sustained release and IOP reduction that matches drops administered daily. Larger animals will be tested next.

**IP Status:** PCT application published as WO2008/157614

**Publications:**


**References:**

4. America, P. B. & Institute, N. E.
5. [http://cws.huginonline.com/N/134323/PR/200511/1020088_5.html](http://cws.huginonline.com/N/134323/PR/200511/1020088_5.html)

**PI:** Erin Lavik

**Licensing Contact:** John Puziss
john.puziss@yale.edu