

AgaPharm is using a popular asthma drug to prevent cataracts caused by diabetes

With 12.5 million people in the United States and Western Europe suffering from diabetic cataracts, AgaPharm has the potential to reach \$8 billion in annual sales

Fast facts

Corporate profile

Using isoproterenol, a drug commonly used to treat asthma, Ottawa-based AgaPharm Corp., a private biotechnology company, is developing a breakthrough medical eye drop that will, with daily use, slow down or even prevent the onset of blindness in diabetics caused by the formation of cataracts.

Why Ottawa

AgaPharm reached out early to the National Research Council, Canada's premiere government research institution, and was granted access to office space and research facilities, including well-equipped labs. This relationship has enabled the young company to invest its money in its product, not in infrastructure. This has accelerated AgaPharm's research, helping to make eyesight clearer for millions of diabetics sooner.

Business advantage

The advantage of repositioning an existing drug is that it speeds development by up to 12 years, compared to the 17 years that is normally needed to develop and test new drugs. Because isoproterenol has already been approved for human use, there is a much lower risk associated with its use. Critical information, such as how the drug is absorbed, distributed and eliminated by the body, is well known and documented.

A commonly prescribed drug, isoproterenol – used by asthmatics and people with heart block, a disorder that slows heart beats – may stop millions of diabetics from losing their eyesight. Using the drug, Ottawa-based AgaPharm Corp., a privately held biotechnology company, is developing a breakthrough medical eye drop that will, with daily use, slow down or even prevent the onset of blindness caused by the formation of cataracts in diabetics.



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People with diabetes are 60% more likely to develop cataracts, a clouding of the lens in the eye. The lens is mostly made of water and protein, and is the part of the eye responsible for focusing light and producing clear images. In diabetics, the protein in the lens can clump together, blurring vision and making it harder to see. Currently there is no prescription drug available to prevent or delay cataracts, and the only treatment is to surgically remove the lens and replace it with a clear implant. This type of surgery is the most common type of surgery in the United States.

There are currently 5.5 million people in the United States suffering from diabetic cataracts and an additional 8 million in Western Europe. Research has shown that delaying cataract formation by 10 years could reduce the prevalence of cataracts by 45%. Working with the National Research Council (NRC) in Ottawa, AgaPharm has discovered that isoproterenol can inhibit glycation – reactions where sugars damage proteins, nucleic acids and lipids – one of the major causes of cataracts.

AgaPharm is a winner in Canada's Top 10 Technology Competition for 2008/2009, sponsored by the Ottawa Centre for Research and Innovation. Since its inception in 1999, competition alumni have secured more than \$522 million in venture capital.

Why Ottawa

Ottawa is an ideal place for a growing science-based company. From research assistance, to a qualified pool of potential employees, the National Capital Region can help push companies towards business success.

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As AgaPharm enters clinical human trials and prepares to bring its product to market, the Ottawa-based biotechnology company is well positioned to tap into local talent and resources, such as new graduates from the University of Ottawa's medicine and health sciences programs.

Business advantage

After testing over 2,000 existing prescription drugs, looking for compounds that could inhibit glycation, Dr. Yasuo Konishi, Senior Research Officer at the NRC, discovered that isoproterenol is a potent anti-glycation agent. "Finding new applications for existing drugs is both low risk and high reward," said Dr. Konishi.

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Dr. Konishi believes that clinical trials, once started, will move quickly because the drug has already been tested. With this in mind, he predicts that an effective way to prevent the leading cause of blindness in adults is less than a generation away.

Because of the growing number of diabetics, AgaPharm has indicated that the company has the potential to earn \$8 billion in annual sales from the eye drops.

Future growth plans

AgaPharm is currently seeking an additional \$7.5 million in financing to complete pre-clinical trials, and start Phase One clinical trials.

Studies completed to date by the NRC suggest AgaPharm's drug has considerable promise. "We strongly believe that our eye drop will replace surgery as the treatment of choice for diabetic cataracts," said Mark Adam, AgaPharm CEO and Founder.

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