

NEWS-LEADER

SPRINGFIELD

December 27, 2008

Research may ease eye pain

One day soon, a new eye antiseptic could be on the market that would benefit cataract surgery patients and help Third World countries treat the most preventable cause of blindness.

What's more, it could be manufactured in downtown Springfield, by local workers.

The eye antiseptic is one of 10 projects under development through a collaboration between St. John's Medical Research Institute and research scientists with the Center for Biomedical and Life Sciences of Jordan Valley Innovation Center, or JVIC.

St. John's partnered with JVIC in 2006 so physicians could develop products and technologies to meet the needs of their patients. Doctors working through St. John's research institute, alone, are currently working on about 40 projects.

If approval goes as expected with the Food and Drug Administration, the eye product could be on the market and available without a prescription within two years, said Dr. Wendell Scott. The St. John's Clinic ophthalmologist is the lead physician, or principal investigator, in the project.

It could be one of the St. John's-JVIC partnership's first products to make it to the commercial market, said St. John's research scientist Keela Davis.

Several other St. John's research projects are close to hitting the market, she said.

Right now, the only product doctors have to prevent pre- and post-surgery eye infections happens to burn the eye and can have toxic effects, so doctors must apply a local anesthetic first, Scott said.

The research at JVIC labs shows Scott's antiseptic can kill a broad variety of bacteria, fungus and viruses on the eye without burning or toxic effects, he said.

It's mild enough to be sold over the counter for minor eye infections, he added, which can reduce the cost of a doctor visit and a prescription.

Bigger still, he said, it could be used to treat an infection, trachoma, that causes blindness in 6 million people worldwide, he said.

"This idea, from a paper of research years ago, ended up becoming a reality because of JVIC and the research institute and MSU making it possible to pursue research ideas," Scott said.

"That's what it's all about."

A 'what-if?' moment

The research project gave legs to an idea that Dr. Scott had 10 years ago.

He read a World Health Organization study about an antiseptic given to prevent newborn eye infection called conjunctivitis. It's an inflammation of the outer layer of the eye and the inner surface of the eyelids, usually due to bacterial or viral infection, or allergic reaction.

What if, Scott wondered, a similar antiseptic could be developed for topical use before and after cataract surgery to prevent eye infection, and wasn't as toxic as an existing product?

"If I could use that for other types of conjunctivitis, then that would be a great product," Scott said.

It could lower the cost for patients -- no need to add anesthetic -- and would be widely available.

"Having an idea and being able to bring it to reality are two different things," he said. "I had no way that I could develop the concept, and especially once I understood what the FDA required...the idea just kind of laid there for a while."

Then came the independent launch of both St. John's Medical Research Institute and JVIC, and Scott resurrected his idea.

St. John's agreed to fund some of the basic science; the state gave a \$25,000 grant for bacteriologic studies by Paul Durham, director of JVIC's Center for Biomedical and Life Sciences.

They tinkered with the formula of an existing drug known to the FDA. (For that reason, FDA approval may not require as much time as a "new" drug, he said.)

"From that research," Scott said, "we refined the formulation and we have one that we think is going to be safer and as effective."

A door opens

Recently, the partners got a major boost when the Missouri Life Science Trust Fund Board announced a \$574,450 grant to fund the next year of work necessary to get the product to the market.

The trust fund had about \$13 million this year, an amount appropriated by the Missouri legislature from annual U.S. Tobacco Settlement money.

The trust fund board selects projects deemed to have good payback in terms of their contribution to human health, job creation and Missouri's economic competitiveness.

"The Life Sciences Trust Fund is a really crucial deal for the state of Missouri to be able to compete in an industry that will help define a lot of state economies in the future around the U.S.," said Jim Baker, coordinator of the Springfield-based Center of Excellence for Life Sciences Board.

The state grant helped propel the eye antiseptic project forward at a time when most revolutionary project ideas die for lack of money, Davis said.

A company needs "significant money" to scale up production, comply with state and federal regulations and hire personnel before it ever sees a return on investment, she said.

More money will be needed in time, she said, and there are funding opportunities at all levels, Davis said.

Philanthropists can donate toward the St. John's Medical Research Institute, or designate a gift to help bring the eye antiseptic product to the commercial market, she said. Entrepreneurs can also invest in this or other projects with a sum of money.

Both the Research Institute and the inventors would share any profit from production. The inventor receives a royalty and the Research Institute would re-invest any additional monies into further medical research and development.

Scott is confident there's a ready-made market for the product among eye doctors, but looks for the day foreign-aid workers can take it to villages in Third World countries.

Next up for the research team: Finish the testing phase, then Scott will help prepare the project for submission for FDA approval.

Meanwhile, Davis and others will begin the search for a business manager this winter and scope out possible sites for a downtown manufacturing plant.

About three people could be employed within the first two years, with more as product demand grows, she said.

In the current economic crisis, some may question the trust fund putting money into lab projects, Davis said.

But she adds, "I see it as the state of Missouri's way of investing in new technologies and early-phase commercialization, which will in turn hopefully stimulate our economy through creating new jobs and new revenue streams for Springfield and the state."