

## Many healthy returns

By JEFF TUCKER

*Sun Staff Reporter*

08/24/2003



In just 10 months, a small, startup company in Flagstaff with five employees has begun to make major waves in the world of women's health.

And the possibilities for the future are "overwhelming."

SenesTech President and CEO Dr. Loretta Mayer shares a patent with University of Arizona's Dr. Patricia Hoyer for a chemical compound that can sterilize female mice.

While that may not sound like an earth-shattering breakthrough, its applications can bridge a gap that will allow the study of hormone treatments on menopausal mice, which can lead to further investigation on their effects on women, something that has been a hot topic as of late with the passage of the Women's Health Initiative.

Jake Bacon/Arizona Daily Sun Dr. Loretta Mayer, President and CEO of SenesTech, holds a genetically modified mouse in a lab at Northern Arizona University Friday. Mayer holds a joint patent with University of Arizona's Dr. Patricia Hoyer for a chemical compound which can sterilize female mice and which is the keystone of Flagstaff based SenesTech. To order this photo, go to <http://photos.azdailysun.com>

Before, in order to test a drug's effects on menopausal women, lab animals underwent a procedure where their ovaries were removed. But this isn't the same as an animal or human going through a menopausal cycle, Mayer said. In menopause, ovaries slowly stop producing eggs but continue to produce hormones within the body.

Mayer's shared patent replicates this process, allowing scientists to do more accurate research on the various effects of drugs under pre- and postmenopausal conditions.

"When the Women's Health Initiative hit, many women stopped their hormone treatments on that very day," Mayer said. "Then in four months, they were back with their doctors

telling them, 'I know that the treatment put me a greater risk for a heart attack, but if I don't take my hormones I'm going to kill my husband.'"

She continued: "What it made clear was that the current hormone compound was given to women without any real rigorous testing."

The new compound developed by Mayer and Hoyer will allow further testing on current treatments and new ones as they are developed.

But the new compound's applications go beyond studying hormone replacement treatments. Currently the compound is being used at Northern Arizona University and the University of California-Davis, to study Alzheimer's disease; its application to diabetes is being studied at Jackson Labs in Sacramento; and it may also have applications in AIDS research.

"Until this model, scientists had to rely on the Ovex model, where the ovaries were removed," said Dr. Cheryl A. Dyer, an associate professor at NAU and executive vice president of research and development for SenesTech. "What we now know is that ovaries that no longer produce eggs continue to produce testosterone and estrogen, and there is an unresolved question on what the effect of these steroids have on things like Alzheimer's disease."

SenesTech has agreements with Jackson Labs to treat some of its mice with the compound, which are then used in research in labs across the country.

But the compound has applications beyond the altruistic applications of scientific research. It also has huge commercial value.

Between 200,000 and 400,000 mice each year will be treated with the compound at Jackson Labs. The royalty on each mouse is about \$10 and the treatment will cut in half Jackson Labs' costs for sterilizing females.

The net result from the contract could be in the millions of dollars over the next few years.

But there are other applications for the compound as well. SenesTech is working on developing a similar compound for domestic animals, which could save a dog or cat from expensive and traumatic surgery to spay the animals. There are also plans to develop a dart version of the compound that could be used to control the populations of feral animals.

SenesTech develops and sells the compound along with the various devices needed to apply it to the animals.

"When we cross the bridge to total commercialization, it opens up absolute clean jobs, where Cheryl and Loretta will be recruiting scientists and students from NAU, and we

anticipate adding a dozen new jobs in the next 12 months," said James Dawson, vice president of commercial services for SenesTech. "Where we go from there is really speculative because the numbers are so overwhelming."

With the added income from commercialization, Dawson said, Mayer and Dyer can continue their research and work on women's health, which is what started all of this in the first place.

Wherever the company goes in the futures, it's very likely it will stay in Flagstaff. Dawson and Mayer said the company is looking into a possible relationship with the Northern Arizona Technology and Business Incubator and has been in contact with its president, Richard Baron, and the Greater Flagstaff Economic Council.

There is the possibility that the company could move into the new applied research building on campus or it could develop a research site of its own.

Whatever the case, Mayer said she isn't ready to leave Flagstaff.

"Cheryl and I were living in La Jolla, Calif., when biotech really happened out there," she said. "When it happened it went from a few really bright scientists who liked to hang out on the beach and just exploded. One thing I like about Flagstaff is that it really has an environment conducive to thinking and has a slower pace. La Jolla isn't slow-paced anymore."

In fact, Mayer said the company was offered office and research space in Sacramento but turned the offer down.

Part of their reasoning comes from the climate in Flagstaff and the rest of Arizona. The aggressive push by the state to develop a "biosciences corridor" stretching from Flagstaff to Tucson, anchored by the Translational Genomics Institute, has the executives at SenesTech believing they've just showed up early for the party.

"If you look at where Arizona can go right now, we believe that we're just at the daybreak point right now," Mayer said. "With the Flinn Foundation here, along with the state's support and Jeff Trent and the T-Gen project, it feels a lot like La Jolla did."

Reporter Jeff Tucker can be reached at 556-2250 or [jtucker@azdailysun.com](mailto:jtucker@azdailysun.com)