

Biotech Says Light Beam Can Identify Signs of Diabetes

Andrew Webb

Journal Staff Writer

TECH BYTES: Serendipity is apparently part of the business plan at Albuquerque biotech Inlight Solutions. The 12-year-old company, which is developing noninvasive glucose monitors that use beams of light, recently spun off a new company based on the accidental discovery that light can also detect molecular changes in skin caused by diabetes. It's the fourth spinoff technology the company has developed as a result of its \$60 million in light-through-skin research.

The new company, VeraLight, aims to make easy-to-use diabetes screening devices that could help diagnose the disease in the millions of people who don't even know they have it.

"We noticed a difference in people with diabetes and without," says vice president of product development John Maynard. "We did some further investigation and, sure enough, found we could use optics to discriminate and determine the risk of having diabetes."

According to the American Diabetes Association, about 18 million Americans—6.3 percent of the population—have diabetes, a disease caused by insulin deficiency and characterized by excess sugar in the blood and urine. Of those, about one-third of cases are undiagnosed, increasing the danger of amputation or damage to the eyes, kidneys and heart without treatment.

One person of every three born in 2000 will likely develop diabetes, according to the association.

"That's 43 million waiting in the wings," says VeraLight CEO David VanAvermaete, noting that diabetes-related health care in the United States costs \$132 million annually. "Something's got to be done."

But existing screens for the disease are cumbersome, requiring fasting and the drawing of blood. Furthermore, the tests take up to two hours and can produce a faulty diagnosis in one out of two patients.

"You've got two tests that are logistically impossible to administer, and they miss half the people," Maynard says.

As a result, only about 5 million people per year receive such screening—a figure that should exceed 100 million at-risk people, he says.

VeraLight's test, which still has to go through Food and Drug Administration-mandated testing and approval processes, would take about 60 seconds to administer. And it's portable—Maynard says it could be used in a mobile van, a pharmacy or an eye doctor's office.

With VeraLight's system, called the Scout, a patient does not have blood drawn. Instead, he or she places one arm in a cradle, where the device sends a beam of light into the skin, where it detects excess bonds between molecules—called crosslinks—caused by a number of factors, including diabetes. Such a test would then be followed up by additional work by a doctor to confirm whether a patient actually has diabetes.

"In some ways, this measures the damage that diabetes is doing," Maynard says. "We like to think of it as a diabetes odometer."

VanAvermaete said the device comes at a good time in diabetes care.

"Ten years ago, nobody wanted to find out" they had it, he said.

Effective interventions and treatments and a renewed government interest in the disease have changed that, he said.

Veralight, which was officially spun off in October, will share space with Inlight until it can raise investment capital. It is working with government grants.

The company also took first place in a competition between different technologies during the recent Annual Iberoamerican Research and Development Summit, a yearly gathering of scientists and businesspeople from the Southwest and Central and South America. The prize includes \$20,000 in development cash and free legal counsel for patent application.

"That was a nice validation of our product concept," Maynard said.

If it gets FDA approval, the Scout could be on the market in three years.

Inlight spun off Lumidigm, which uses light to verify identity, in 2001. A second spinoff, Molecular Insight, aimed to use light to diagnose diseases from tissue samples, but it was later absorbed back into Inlight Solutions. Inlight is working on a fourth technology, which would use light to detect the presence of alcohol in people at traffic stops or other situations.

LOCAL TECH WORKING IN TURKEY: Another Albuquerque company, 13-year-old Thermogenics Inc., is to start construction in January on a \$10 million gasification plant in



Istanbul, Turkey, that will turn 300 tons of municipal waste per day into electricity.

The plant will use a process called gasification, in which trash, coal or other fuels are subjected to intense heat but starved of oxygen, resulting in the release of hydrocarbon gas.

The gas, in this instance, will run an internal combustion engine connected to a generator, says Thermogenics president Tom Taylor.

The company is also negotiating with an unnamed Albuquerque natural gas supplier to build a similar plant here, at a cost of about \$6 million, to help allay the high costs of natural gas.

The technology can replicate natural gas at a third the cost of the natural fuel.

Andrew Webb covers technology news for the Journal. You can reach him at 823-3819 or awebb@abqjournal.com.

