NEWS

Mendel Biotechnology: Search for a better tomato

By Leslie Mladinich
May 27, 2001, 9:00pm PDT
Updated May 27, 2001, 9:00pm

Although 2001 is supposed to be a banner year for venture capital to sink big bucks into biotech, Mendel Biotechnology of Hayward realized it was at least two years away from answering more questions about a new project in plant gene expression the company would love to commercialize.

Mendel Vice President William Goure and senior scientist James Zhang flirted with, and in a few cases actually approached, about a dozen companies with their plans.

"But in the absence of demonstrating how it would work, no one wants to pay for the (project's) funding," Goure said.

So Mendel Biotechnology, a privately held, 68-employee company that licenses regulatory genes designed to produce drought and freeze-resistant crops, took on another funding strategy to produce the perfect tomato. The company applied for the prestigious Advanced Technology Program grant, one that was created because "the government is always looking for the next Ford Motors and AT&T," Zhang said.

About 15 percent of the companies that apply to the National Institute for Technology and Standards for the grant land an interview, and of those only 60 percent actually receive money.

If successful, the $4.2 million matching grant for Mendel and its partner, Seminis of Oxnard, would place functional genomics in the hands of everyday breeders in the fields, who can use the technology to produce crops that are disease-free, chock-full of nutrition with greater yields. Identifying the genes that carry these traits is at the heart of Mendel's technology.

Mendel's partner, Seminis, is the one of the world's largest producers of vegetable seeds. According to Zhang, the collaboration is similar to those that software giant Microsoft strikes with computer manufacturers to supply its software that can be bundled and sold with PCs. In this case, Mendel would supply its technology to large biotechs who would incorporate it into their own products.

Technology like Mendel's would put tools in the hands of the largest biotechnology companies faced with the daunting task of sifting through hundreds of plant genes to find the best ones for producing near-perfect crops.

Mendel and Seminis are choosing to target the genes found in the tomato because it's a large cash crop whose genes are easily defined, can only grow in a certain window of time during the year, and is processed constantly for pastes and other food products, Zhang said.

The tomato also has an auspicious place in the controversial developments surrounding genetically modified food products. In 1994, after a decade of research and development, the U.S. Food and Drug Administration determined that a tomato developed through biotechnology was as safe as those bred by conventional means, which gave birth to the first genetically engineered food to hit grocery stores, the Flavr-Savr.

Calgene, a subsidiary of Monsanto, put a bacteria-enhanced tomato that was supposed to toughen the fruit up for shelf life on the market in 1994.

"But they couldn't sell enough tomatoes so they yanked it. The consumers said, `This costs too much for any difference that I see,'" said Clair Hicks, a University of Kentucky biotechnology professor and Institute of Food Technology member who specializes product development.

But companies that win grants through the ATP program have a strong track record of success at turning research into serious profits.

In 1994, Affymetrix of Santa Clara won a grant worth $30.5 million to develop key chain-sized DNA chips containing thousands of gene sequences that detect matches in blood or tissue samples up to 100 times faster than conventional methods.

The grant has also helped some heavy hitters within the industry. Monsanto, arguably the world's dominant agriculture biotechnology company, Maxygen of Redwood City, and Bio-Rad of Hercules are other big biotechs that have developed and sold products through an ATP grant.

After reading a condensed version of Mendel's ATP grant, however, Professor Hicks said he thinks the idea is so novel that it could be hard to carry off. Hicks said if Mendel can find the correct promoter gene, which he compares to a switch, that promoter will turn on another gene that produces the proteins of the most desirable crops.

"They aren't stacking genes together, they are cross-breeding," said Hicks.

https://www.bizjournals.com/sanfrancisco/stories/2001/05/28/focus6.html