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BIOTECH, PEOPLE, STARTUPS

## Amplex Pharmaceuticals, Led By Women, Builds Platform for Improving Drugs for HIV, Cancer

Luke Timmerman 4/20/10

Sometimes a company only raises a small sum of money, but it attracts our attention because it involves interesting people and a potentially big idea. That was true last week when I profiled **Avelas Biosciences**, the latest startup from UCSD Nobel laureate Roger Tsien, and it's true this week of another small company in San Diego—Amplex Pharmaceuticals.

Amplex appeared on our radar a couple weeks ago when it raised \$1.5 million from Golden Seeds, a national angel group that invests in companies led by women, with additional support from Life Science Angels and Tech Coast Angels. The CEO is Elaine Heron, the former CEO of LabCyte, a sales and marketing veteran at Applied Biosystems, and a board member at Novato, CA-based BioMarin Pharmaceuticals (NASDAQ: BMRN). Another prominent businesswoman, Mary Lake Polan of Stanford University School of Medicine, and a former director of Wyeth, joined Amplex as a board observer.

This company is still in its early days, but the idea is a big one—take an existing small molecule that has been shown to be active against a certain disease like HIV, and improve it in a critically important way. About half of all drugs on the market today have some kind of Achilles heel—maybe it isn't absorbed well enough, doesn't get wide enough distribution in various tissues, gets metabolized too quickly to be truly effective, or isn't excreted in an ideal way. Amplex, through a trick of chemistry, attaches a small organic linker to the existing drug to create a new molecule with whatever new property is desired. The new drug ought to be safe, and, importantly, it is a new entity that can be patented, Heron says.

None of this work has yet advanced into clinical trials, so we have no way of knowing whether this will work in human beings. But one way of reducing the immense risks of drug development is by starting with an established drug that has already cleared the FDA's safety hurdles.

"I think this is going to work," Heron says. "I've seen a lot of drug development platforms, and I've been selling to people in the space for a long time. This made sense to me."

Of course, there are some men in key roles at this company, too. I spoke to Heron along with Amplex's co-founder and chief scientific officer Mitchell Mutz. The Amplex technology has its origins with work done by Mutz and a pair of pathologists—Gerald Crabtree of Stanford University and Jason Gestwicki of the University of Michigan.

Amplex's lead project, as hinted above, is to create a better drug for HIV. There are some very effective protease inhibitor drugs on the market that have made HIV a chronic disease for many people in the U.S. But one of the drawbacks is that such drugs don't last long enough in the bloodstream, and need to be taken in combination with a booster compound from Abbott Laboratories called ritonavir. That extra drug adds cost, complexity, and can cause some nausea.

If Amplex has done its early chemistry correctly, it may be able to help patients ditch the ritonavir. The scientists have modified a protease inhibitor drug so that [...NEXT PAGE >](#)

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Elaine Heron

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it binds with a common protein called FKBP, which was able to help the treatment stay active against an HIV protease 20-times longer. That's the difference between a drug that gets metabolized in a few minutes, versus one that could be given as a once-daily pill for HIV, Heron says.

This is the same problem that Lexington, MA-based Concert Pharmaceuticals is attempting to solve with a different method of chemistry. Concert is the far better-heeled contender in this race, having secured a partnership with GlaxoSmithKline that could be worth as much as \$1 billion over time, and which has already received a \$12 million milestone for initiating a clinical trial of an HIV drug that's supposed to eliminate the need for ritonavir. This is part of GlaxoSmithKline's strategy to grab back some of the market share it has lost from the leading HIV drug producer, Foster City, CA-based Gilead Sciences.

Amplix doesn't have a big-name partner, and it isn't as far along in testing as Concert. With its new round of cash, Amplix is working to show that its HIV drug can be given orally. But to show the broad potential of its "platform" for modifying existing drugs, Amplix also has a project to make an improved antibiotic, as well as a cancer treatment, Heron says.

If Amplix can hit the milestones that its angel backers have laid out, it could be in a position to raise more venture capital or potentially form a partnership with a big drugmaker, Heron says. I didn't hear her saying anything concrete about timelines for when Amplix will have its first drug in clinical trials. This is obviously a long way from generating solid proof that its concept works in people, and she didn't try to pretend otherwise. But Heron herself is an angel investor in the company, and thought enough of its potential to devote her time as CEO.

"We have vastly increased the probability of success because the molecules we're working with have been shown to be safe," Heron says. "And it's really a platform we can apply to many different drugs."

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