



Florida Atlantic U, Spinout Moving Skin Cancer Rx to Clinic with State ‘Gap’ Funds

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By Ben Butkus

Florida Atlantic University and spinout Cancer Health Solutions Resources are using a \$184,000 commercialization-assistance grant from the state to conduct proof-of-concept human clinical trials for a drug against pre-cancerous skin lesions, company and university officials said this week.

The gap funding, which has been matched by CHS Resources for a total of \$368,000, will also enable the company to continue developing a UV-protective skin lotion based on the same chemicals comprising the drug candidate.

The lotion may more readily be commercialized and provide an early source of revenue that could help CHS continue moving the cancer treatment toward regulatory approval and attract additional outside investment, officials said.

The award was one of several made earlier this year as part of the State University Research Commercialization Assistance Grant program, or SURECAG, which was established last year as part of a broader \$35 million bill passed by the Florida government to promote the commercialization of university research and encourage early-stage investment in emerging companies in the state (see [BTW, 6/4/2007](#)).

The SURECAG grants are intended to help universities secure patents, launch startup companies, develop license agreements, and attract private investments. They also require a dollar-for-dollar match by an outside source — in this case by CHS itself.

“This is a company we’ve been working with for a couple of years now, so for us it is a big deal, because it’s a vote of confidence from the state,” Kurt Moore, assistant vice president for research and director of the FAU Office of Technology Transfer, told *BTW* this week. “Now we can pool some resources, and I think it makes it more attractive for CHS to bring other partners on board.”

CHS President Stephen Chakoff told *BTW* that the SURECAG grant was the first outside source of funding for the company, which spun out of FAU in 2005 with undisclosed personal investments by company founders and about \$15,000 in internal gap funding that the school awarded to its professor Herbert Weissbach, who made the discoveries on which CHS' product development is based.

The SURECAG grant "was important because it allowed us to push a little further and apply for the state award," Moore said.

Chakoff added that two more undisclosed investors have recently backed CHS, and the company is priming itself to attract additional VC investment.

"We anticipate that these funds from Florida, plus the additional money we put in ourselves, will put us in a position to have enough information to really excite venture capitalists or some funds to invest in the next phases, which will require significant capital to move forward," Chakoff said.

Skin Deep

CHS got its start after Weissbach, who is a professor and director of the Center for Molecular Biology and Biotechnology at FAU, found evidence that the well-known anti-inflammatory compound sulindac could, through a different mode of action, protect cells against the type of oxidative damage typically caused by cellular byproducts.

However, Weissbach also found that when transformed and malignant cells were treated with sulindac and subsequently exposed to oxidative stress, the viability of the cancerous cells dropped precipitously while normal cells were unaffected.

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"This is the type of thing you like to look for in terms of cancer treatments — something that will affect cancer cells but not normal cells," Weissbach said. "The ideal use of this would be a treatment for skin lesions where you could put the sulindac on, and then an oxidizing agent."

CHS has already completed a non-regulatory proof-of-concept human clinical trial of such a treatment for actinic keratosis, or pre-cancerous skin lesions, producing "promising results," according to Weissbach.

Furthermore, Weissbach said he is looking into whether sulindac can protect cells against oxidative damage like the kind caused by UV radiation.

He also said that he and CHS will use the SURECAG grant to develop the research along two lines: as a potential treatment for actinic keratosis and as a

protective skin lotion "with the idea that we might develop a sunscreen [that] would prevent UV rays from damaging the skin because of the presence of sulindac; and possibly, if the UV rays did get through to create a malignant cell, since the sulindac kills the cancer cells, it might be a unique thing to have in a sunscreen."

Specifically, CHS will use the funds to conduct two additional non-regulatory clinical trials in south Florida for the actinic keratosis treatment in hopes that it can produce enough positive data to attract additional investors and pursue regulatory approval; and to conduct POC studies for the chemical combination as a protective skin product.

“A good first step to be able to start generating revenue would be to come out with a sun lotion that would combine with some of the properties associated with sunscreens but have this anti-oxidant protection,” Chakoff said.

If the company is able to successfully market such a product, Chakoff said, it will “significantly increase the ability of venture funds and other investment groups to look at us and say, ‘Here’s a company where even though there is a long-term plan, there is also a short-term plan to start generating some cash.’ That two-pronged approach is probably a good way to go,” he added.

CHS signed an agreement in early August with consumer-product developer IGI to develop an over-the-counter sunscreen based on the technology.

Sulindac is marketed by Merck as an anti-inflammatory. Weissbach said that FAU applied for US patents covering the compound’s use as a cancer preventive or treatment and as a skin protectant, some of which have been awarded and some of which are still pending.

CHS has licensed from FAU the patents covering the cancer candidate; and is currently negotiating with the school for a license to the patents covering the protection effect, Weissbach said.

According to Chakoff, FAU will receive licensing fees as part of its existing agreement with CHS, based on different commercialization milestones. FAU also has an undisclosed equity stake in the company, and would be owed royalties on any products based on Weissbach’s discovery.

If CHS’ business plan progresses, the company and FAU may be just scratching the surface of sulindac’s anti-cancer potential, according to Weissbach. He said that initial cell-culture studies done in lung cancer, colon cancer, squamous cell carcinoma, and skin melanoma cells all demonstrated the same enhanced sensitivity to an oxidizing agent if they were pre-treated with sulindac.

Any treatment for an internal cancer, however, would be a long way off. “You would need sulindac plus another compound that could create the oxidizing agent in the cell,” Weissbach said. “That, in combination with sulindac, might present a pathway for internal treatment. Of course there are other cancers you might be able to reach in the mouth or vaginal canal, for instance.”

For his part, Weissbach believes that funding like the kind provided through SURECAG is invaluable to helping university researchers develop their discoveries.

“This whole concept of the state saying to the university community and small businesses that it wants to promote this type of interaction between universities ... is a way to promote innovation,” Weissbach said.