

## Florida Atlantic licenses cancer therapy to CHS Resources LLC Therapy

Florida Atlantic University (Boca Raton, FL) announced an exclusive license agreement with CHS Resources LLC for a novel cancer therapy which has emerged from its Center of Excellence in Biomedical and Marine Biotechnology. CHS Resources will develop and ultimately commercialize patent pending technology for the treatment of skin cancer. The technology was discovered by Dr. Herbert Weissbach, director of the Center for Molecular Biology and Biotechnology and professor at FAU's Charles E. Schmidt College of Science, in conjunction with colleagues at the university. FAU researchers will continue to conduct scientific studies related to this research project, and CHS Resources will pursue business and commercialization opportunities.

"CHS Resources is extremely pleased to have licensed this exciting technology from Florida Atlantic University and is proud to align itself with their highly-experienced team of scientific researchers," said Stephen Chakoff, president of CHS Resources.

Initial experiments in Weissbach's laboratory were attempting to determine if cells could be protected from oxidative damage (damage to cells caused by oxidants or chemicals that capture electrons from other substances). What Weissbach and researchers at FAU serendipitously discovered was a novel combination of agents that work synergistically and selectively to target and kill cancer cells while preserving normal cells. To examine whether this biological effect was a general phenomenon with cancer cells, Weissbach and his team conducted additional experiments with lung cancer cells, colon cancer cells, skin cancer cells and a melanoma cell line. Results of these experiments showed that all of the cancer cell lines that were used exhibited a similar response of enhanced killing of cancer cells, but normal cells were not affected.

"While cancer represents a collection of distinct diseases, oxidative damage stands out as one of the most likely culprits for cellular damage and therefore may be a major contributor to many cancers," said Weissbach. "Furthermore, recent scientific studies suggest that malignant cells have a different response to oxidative stress than normal cells. Our team has identified a lead compound that in combination with an oxidizing agent or agent that generates reactive oxygen species (ROS) preferentially targets and kills cancer cells."

Based on these findings, Weissbach and his team have formulated a topical skin preparation for CHS Resources which is being tested for actinic keratoses (pre-cancerous skin growth) in a proof-of-concept clinical trial underway at the renowned University of Alabama's Department of Dermatology. In addition to this clinical trial, Weissbach and his team are conducting ongoing research to determine the mechanisms of action of their unique formulation, and designing and synthesizing derivatives of the formulation as potential anti-cancer agents.

"A major focus of our next-generation therapy is to develop a selective, targeted therapy that only affects the cancer and does not damage healthy cells throughout the body," said Weissbach. "A key area of our current research is the discovery of new anti-cancer agents that exploit unique properties of tumors that induce or modulate apoptosis, which is the selective and premature death of cancer cells."

"This is just another example of the power of investing in centers of excellence to provide the commercial translation of research," said David Gury, executive committee and board member of BioFlorida and chair of FAU's Charles E. Schmidt College of Science advisory board. "The technology that is coming out of FAU's Center of Excellence will continue the process for developing high-wage and high-skill employment opportunities in the state and is the basis for the establishment of these centers."

CHS Resources' founding members are Stephen Chakoff and Dr. Elliot Hahn. Chakoff has been involved in the medical device industry for more than 30 years and his extensive background and experience include corporate management, product development, regulatory affairs as well as sales and marketing. Hahn is among the leading pharmaceutical industry experts in Florida and he serves as chairman emeritus of Andrx Corporation, with a recent agreement to sell the company to Watson Pharmaceuticals for \$1.9 billion, and as president and director of ACCU-BREAK Pharmaceuticals, Inc., a Plantation, Florida-based company that has developed a breakthrough technology designed for maximal dose accuracy when splitting pills and for ease of use. He also sits on the board of directors for a number of public and private pharmaceutical companies.

Weissbach came to FAU in 1997 and is a distinguished research professor. He is a member of the National Academy of Sciences, a fellow of the American Academy of Microbiology, and was recently appointed by Florida Governor Jeb Bush to

the James & Esther King Biomedical Research Program's Biomedical Research Advisory Council for a three-year term. Weissbach received his Ph.D. in biochemistry from George Washington University and spent 16 years as a researcher at the National Heart Institute of the National Institutes of Health. He was instrumental in establishing the Roche Institute of Molecular Biology in 1967 and became director of the Roche Institute and research vice president of Hoffman La Roche in 1983. Over the years, Weissbach's research interests have focused on the areas of enzymology, protein synthesis, regulation of gene expression and oxidative stress. He has published more than 400 articles and edited five books. Weissbach has received numerous awards and honors including the American Chemical Society's Enzyme Award, the Townsend Harris Award from City College and the Distinguished Alumni Award from George Washington University. He was also listed in the top 300 most cited authors (1961-1976). Weissbach will serve as chair of the scientific advisory board of CHS Resources and provide technical and scientific direction.

"We expect that a broad range of cancer patients may benefit from this novel therapeutic approach," said Dr. Larry F. Lemanski, vice president for research at FAU. "I am delighted that the Center of Excellence funding has led to these important discoveries. The division of research at FAU is committed to supporting and promoting further investigation on these scientific efforts for the selective anti-cancer effects of our technology, and assisting CHS Resources in bringing this important discovery to the marketplace."

Cancer is a complex set of diseases with intricate genetic and environmental causes, and drug discovery efforts are crucial for the rapid implementation of effective therapies directed against the disease. The American Cancer Society estimates that cancer will kill over 500,000 Americans in 2006 and that 1.5 million new cases of cancer will be diagnosed. Dermatologic diseases affect an estimated 50 million Americans and result in over \$2 billion in annual sales of prescription medications with an estimated yearly growth rate of five percent. Actinic keratosis is often a precursor to skin cancer and is a growing problem among the aging population. Approximately 1.3 million Americans are diagnosed with actinic keratoses each year and many of them face the risk of the condition developing into cancerous lesions.

Established in 2003, FAU's Center of Excellence in Biomedical and Marine Biotechnology was selected by Florida's Emerging Technology Commission as one of three centers in the state to receive \$10 million. Since receiving the initial funding for the center, FAU has secured an additional \$26 million from other sources including federal and private research grants. As a result, the center has emerged as an academic and industry partnership combining expertise in ocean engineering, marine biotechnology, functional genomics, proteomics and bioinformatics. Researchers, scientists and students at the center are designing technologies to explore the sea, discovering new medicines from the sea and developing new therapeutics to combat agents of bioterrorism. The Center is also contributing to Florida's economic growth by creating spin-off companies and training a highly skilled biotechnology workforce.

Florida Atlantic University opened its doors in 1964 as the fifth public university in Florida. Today, the university serves 26,000 undergraduate and graduate students on seven campuses strategically located along 150 miles of Florida's southeastern coastline. Building on its rich tradition as a teaching and research university, with a world-class faculty, FAU hosts eight colleges -- the Dorothy F. Schmidt College of Arts & Letters, the Charles E. Schmidt College of Science, the Christine E. Lynn College of Nursing, the Harriet L. Wilkes Honors College, and the Colleges of Business, Education, Engineering & Computer Science, and Architecture, Urban & Public Affairs.

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