

PluroGel Advances Wound Care, Eliminates Infections And Saves Lives

University of Virginia Patent Foundation



PluroGel™, an antimicrobial gel used by the University of Virginia (U.Va.) Health System, is under review by the FDA for commercial approval, a testament to the physicians and patients who have benefited from the product and demanded that the gel be made available beyond the university hospital.

The antimicrobial gel has proven significantly more effective than existing therapies in treating severe burns and chronic wounds, such as diabetic ulcers, pressure ulcers and venous leg ulcers. The topical treatment is unique in that it thickens at high temperatures (such as body temperature) and liquefies at cooler temperatures. As a result, PluroGel effectively delivers healing medication when applied to the body but is easily removed by cool water, making it much less painful to remove than existing therapies.

The U.Va. Patent Foundation named George T. Rodeheaver, Ph.D., professor of biomedical research, U.Va. Department of Plastic Surgery, as the 2008 Edlich-Henderson Inventor of the Year for his work on the revolutionary wound-healing technology and its overriding benefit to society.

Rodeheaver began research on a burn and open wound treatment with his colleagues in the 1970s. The resulting product, PluroGel, has been successfully used to fight infection and heal burn and chronic wounds in more than 2,000 patients with superior results.

“The fact is that in our burn center, we have been able to eliminate infection, which was the leading cause of death 15 years ago. And we have had great success in healing chronic wounds, many of which (with traditional remedies) had not healed for numerous years,” Rodeheaver says.

Because of the level of success achieved within the U.Va. Health System, word quickly spread to neighboring states such as West Virginia, North Carolina and Tennessee. The health system saw an increase in patients who traveled 300-400 miles to get this treatment. In addition, Rodeheaver said he began to receive calls from former U.Va. wound and burn care surgeons he had trained who were frustrated by the lack of access to PluroGel at other hospitals.

“The benefits and success with our patients was so overwhelming that the university got behind the process of encouraging us to make it available to a wider audience than just U.Va.,” says Rodeheaver.

Technology transfer was uncharted territory for Rodeheaver. However, he was able to tap into resources U.Va. had in place to assist faculty members in moving their products from concept to commercialization. With support from the U.Va. Patent Foundation, Rodeheaver and colleague Adam J. Katz, M.D., Department of Plastic Surgery, patented and licensed the technology. Next, the duo turned to Spinner Technologies, a for-profit branch of the Patent Foundation that exists to encourage faculty start-up programs. With the help of Spinner, and with the aid of an M.B.A. student from U.Va Darden School of Business, they completed a business plan and named their company PluroGen Therapeutics.

The PluroGen plan was entered in U.Va Batten Institute’s Business Plan Competition, earning the company \$10,000. In addition, they were given a spot in the Darden Progressive Incubator, a program that offers start-ups a team of business school advisors, office space and an intern. With the help of the Darden students, the company began an ambitious marketing campaign to secure funding to cover early start-up expenses.

Finally, Katz and Rodeheaver tapped into the T100 U.Va. Alumni Mentoring program, which provided business experts to help them further refine their business plan and hire their first CEO and president, Neal Koller. As a result, Rodeheaver says, “PluroGen became much more polished and professional.”

The company has been focused on the commercialization of PluroGel for more than five years. “We’re still in negotiation with the FDA, but we are very encouraged.”

“The process has been a successful litmus test for the entire technology transfer program,” he says. “Developing PluroGel with the support of the entire U.Va. system has been the best source to drive the product to success, rather than a corporate entity.”

“It’s important to remember that the whole motivation was driven by the patient benefit and success we achieved for patient improvement. It was not driven by any commercial incentive. We wanted to make the material available to

patients outside of U.Va.”

“The technology has had a dramatic impact so far,” said Rodeheaver. “We are only in the beginning of benefits of PluroGel and what it can bring to the health care community on a global basis,” he says. “In third world countries the availability of an antimicrobial gel for treating burns and chronic wounds will have tremendous impact. Look what it did to the U.Va. Burn Center, which was already at the advanced edge of burn care,” he adds. “We thought we were the best, and we still had infections.”

 *Rodeheaver hopes to continue his research on PluroGel with other applications beyond infection.*

He believes that he is at the beginning of a pipeline of products to enhance healing for the masses. “We can use this unique gel to carry active ingredients such as anti-inflammatory agents or whatever you think the tissue needs to heal—to improve blood flow and cellular repair of damaged tissue, and optimize the healing process.”

“Entrepreneurship in particular is something I see as a brand-new adventure,” he says. “It’s been unique and exciting.”

Continued efforts will bring its benefits to patients everywhere, said Marie C. Kerbeshian, Ph.D., executive director of the Patent Foundation.

This story was originally published in 2009.

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