

A groundbreaking 'biologic Band-Aid'

Docs hope to use pig tissue to heal burns

By **BOB MCGOVERN**

A former Navy SEAL and a team made up of some of the Bay State's top medical minds are working on a groundbreaking technology that could potentially save the lives of countless burn victims around the world through the use of tissues derived from genetically modified pigs.

"This is an opportunity to bring a lifesaving treatment not only to burn centers across the United States, but also around the world," said Dr. Curtis Cetrulo, a plastic surgeon and chief medical officer for XenoTherapeutics Inc.

"This technology — which can be stored — can eliminate the problem when there are not enough resources," he said.

XenoTherapeutics is a nonprofit founded by Paul Holzer, a former Navy SEAL and Massachusetts Institute of Technology graduate who is pursuing his medical degree at Dartmouth College. The nonprofit has created Xeno-Skin out of genetically modified pig tissue, a product Holzer hopes will soon be ready for burn victims.

"I was really excited when I saw that there was real promise to this after the pre-clinical work," Holzer said. "This is something that works, and this is something that is going to save lives. Right now we're working toward a human clinical trial in 2017."

XenoTherapeutics, which is working in partnership with Massachusetts General Hospital, is in the process of taking comments from the Food and Drug Administration and putting forward an official investigational new drug application, according to Holzer. After that, Holzer said he hopes his team will get the green light to do the first trials on humans at Sumner Redstone Burn Center.

"Given all the work and preparation that we have done — and the feedback by the FDA — I am confident that all of this will be approved," he said.

Although officials were initially concerned that the porcine endogenous retrovirus — a virus found

in pigs — would harm humans using Xeno-Skin, Holzer said physicians studying the product found the virus doesn't reproduce well in human cells.

"The absence of a good receptor in normal human cells that make it much less likely that infection will occur," said Dr. Jeremy Goverman, the clinical trial principal investigator for XenoTherapeutics. "If infection were to actually occur, all of the drugs created during the AIDS epidemic also have activity against this virus — so we would be able to treat it."

The nonprofit calls Xeno-Skin a "biologic Band-Aid" that can be mass-produced, stored and then shipped to wherever it is needed.

It is already being hailed by burn victims who are rooting for Xeno-

Skin to change the lives of burn victims worldwide.

"I believe we can see more burn survivors and less burn victims," said Joy Greene, who survived a May 2011 accident in Boston that left her with fourth-degree burns on 30 percent of her body.

"If you've been through it," she said, "you know how important this is."

— bob.mcgovern@bostonherald.com

'LIFE-SAVING TREATMENT': XenoTherapeutics founder Paul Holzer, below right, and MGH Dr. David A. Sachs, below left, are developing a groundbreaking treatment that has healed burn victims such as Joy Greene, right.

STAFF PHOTOS BY ANGELA ROWLINGS

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