



MUSCLE MAN

# This Houston biotech company hopes to one day fix your aging muscles



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Houston-based Ridgeline Therapeutics isn't going to allow you beat aging, but someday it may well help you to live without muscle loss or diabetes. *Getty Images*

**S**tan Watowich's conversation flits with ease from restaurants to solving the homeless crisis. His active mind has made him a serial inventor. But the founder and current CEO of **Ridgeline Therapeutics**, a spin-off company of the University of Texas Medical Branch in Galveston where he is an associate professor of biochemistry and molecular biology, also has a razor-sharp focus when it comes to discussing his research. He wants to make it clear that he is not going to cure aging.

"You and I are still going to get old," he says. "But we have our hopes that as we get old our muscles will stay healthy."

He's talking about the drug candidate, RLT-72484. It has been shown to reactivate muscle stem cells and regenerate skeletal muscle in aged laboratory mice. We've all seen it in elderly humans: Your grandparents are shrunken from their younger selves because their muscles no longer regenerate at the rate that they once did.

"When you go to the gym, you feel that burn which indicates that you have muscle damage. Your stem cells are responsible for repairing this damage and building your muscles," Watowich explains. Stem cells simply don't repair at the same rate in older individuals.

That's why, for example, elderly people who break a hip often fare poorly in the aftermath. It's not uncommon to face a difficult period of physical therapy following hip fracture surgery. Many patients do not return to independent living. And, the mortality rate one year after a hip fracture can be as high as 30 percent. If RLT-72484 proves to work as well in humans as it does in animal models, it could make it easier for patients to gain muscle after a fall.

But even for healthy older adults, muscle decline can cause problems. Travel is difficult if you don't have the muscle strength for long walks. Playing with grandchildren is a challenge if your mobility is compromised. Watowich's vision is to prevent muscle decline or at least slow it down.

The drug could also potentially help muscular dystrophy patients. The genetic diseases identified under that umbrella diagnosis all cause muscle loss before old age, sometimes even in infancy. If RLT-72484 fulfills its promise, it could allow MD patients to live more normal lives.

In the University of Texas Medical Branch study, the mice's muscle fiber doubled in size while muscle strength increased by 70 percent. The team published a study last month describing its results. The next year will be spent on studies necessary to win FDA approval to begin testing on humans.

Muscle loss isn't the only big problem Ridgeline Therapeutics is seeking to address. Obesity-linked diabetes is also in Watowich's sights. His team has come up with a small molecule that shrinks fat tissue in obese animals. In studies published last year, mice lost seven percent of their body weight in 10 days of treatment without changing their diets. The animals remained obese, but their fat deposits had decreased in size by 30 percent. The drug on its own cannot make obese people thin, but it may help diabetics to return to a non-diabetic state.

Ridgeline Therapeutics is based in the Texas Medical Center. Watowich explains that 98 percent of biotech companies fail, so it's his goal to "stay lean" and use the \$4.2 million award the company received from the Department of Defense to get their technologies into human trials. The company will likely move to the Johnson & Johnson Innovation Labs collaboration space in the next few months.

But of course, what Ridgeline Technologies has to offer is most exciting of all. Remember, it's not going to allow you beat aging. But someday it may well help you to live without muscle loss or diabetes.

