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Battling Bacteria In Biotech Start-Up

Chief Executive Susan Froshauer One Of Seven Women In State Chosen For Creative Leadership

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Susan Froshauer collects old containers for patent medicines and pills.

Dozens of tins and bottles that once held long-forgotten remedies are displayed at her office at Rib-X Pharmaceuticals Inc., a start-up biotechnology company in downtown New Haven.

The contrast between those aging containers and the company's mission could hardly be sharper.

As chief executive, Froshauer, 52, oversees Rib-X's cutting-edge research on compounds that could solve one of medicine's toughest problems: how to battle bacteria that are resistant to conventional antibiotics.

Founded just five years ago, privately held Rib-X (pronounced RY-bex) has already raised \$73 million in venture capital from various investors - a massive amount for a young company and an indicator of the tremendous interest in the company's research.

Though it has yet to develop a commercial product, the company has already entered early-stage clinical testing on a promising candidate for treating drug-resistant infections and has more prospects on the way.

Experts said it's rare for a fledgling biotech company to get such financial support and progress so quickly toward producing a viable product.

Such performance helped earn Froshauer,

who holds a doctorate in microbiology and molecular genetics from Harvard University, one of this year's Women of Innovation awards. She was recognized for entrepreneurial innovation and leadership.

Her award was one of seven presented to women across the state by the Connecticut Technology Council, a leading organization of technology businesses. Now in their second year, the Women of Innovation awards recognize the achievements of women in a wide range of technology-oriented fields.

"She's been responsible really for the founding of Rib-X Pharmaceuticals and she has done a superb job of making it go," said Thomas Steitz, a Yale University researcher.

Steitz, a Rib-X founder, helped reveal the atomic structure of the ribosome, a key protein-making component in living cells. Rib-X takes its name from ribosome.

For Froshauer, helping to get Rib-X up and running has been a rewarding but all-consuming challenge that has tested the scientific and administrative skills she had developed over an entire career. Rib-X, she said, is "not just about beautiful science but about building a pipeline of products with commercial value. That has been part of our thinking from the very beginning. You've got to learn that early."

Prior to leading Rib-X, Froshauer spent years at Pfizer, the global pharmaceutical company. Her early years were spent as a researcher, managing a drug discovery laboratory focusing on fighting infectious

bacteria and bolstering the immune system.

Later, she moved into business development, creating partnerships between Pfizer and academic researchers that ultimately yielded a technology investment portfolio valued at \$200 million. But even that didn't entirely satisfy her entrepreneurial urge. And so she decided to strike out on her own.

"I left Pfizer before I had Rib-X in mind. I just knew I wanted to do something else. I knew my destiny was not to function as part of a large organization for a long time," she said.

Through contacts from her own post-graduate work at Yale and through her husband, Yale Professor Donald Engelman, Froshauer eventually settled on Rib-X as the right challenge to undertake.

At the heart of Rib-X's efforts is a microscopic part of living cells known as the ribosome. Work by Steitz and other Yale scientists revealed the structure of the ribosome, and they quickly realized that this insight could be used to develop new drugs.

Since the ribosome helps bacteria become immune to antibiotics, Rib-X began looking for compounds to block the immunity mechanism from working. "The driver here is the medical need to develop new antibiotics that are not susceptible to resistance," Froshauer said.

Using her knowledge of laboratory research and her experience in forming drug discovery enterprises, Froshauer set about raising money and assembling a team of top scientists. The company now has 47 employees.

Paul Pescatello, president of Connecticut United for Research Excellence, or CURE, a biotech industry group, said building Rib-X highlighted Froshauer's strengths.

"Her combination of scientific expertise melded with her business acumen is what makes her very special," Pescatello said. "It's that ability to understand what's going on in the lab and also be a hard-nosed business woman."

Building a biotech start-up is a tough challenge for anyone - but perhaps particularly so for a woman in a field where men usually hold the top executive posts, said Michael Lytton, a general partner in Boston-based Oxford Bioscience Partners, a venture capital firm that invested in Rib-X.

"When we did the investment in 2001, several of my partners expressed concern at the fact that there are relatively few female CEOs of large biotech companies. Were we right in making a bet on a woman who had never been a CEO, had never worked for a biotech company and had no small-company experience?" he said.

"Susan did not check many of the traditional boxes that one looks to check in recruiting a CEO," said Lytton, now a member of the Rib-X board of directors. "She was an unconventional choice. We are very grateful that we had the courage to make it."

Breaking the conventional mold isn't new to Froshauer, who said she's "been independent and made my own decisions from early days."

Froshauer got early training in botany at Connecticut College at a time when even fewer women were studying science than today. She credits Betty Thomson, a botany professor, with being a mentor by having encouraged her scientific interests. "She taught me how to study in science," she said.

Froshauer said her husband has "been a partner in this career and has supported it. He did not expect someone who would come home and make dinner every night."

Her biggest challenge has been balancing her working life with time for recreational pursuits, such as kayaking, gardening and enjoying dinner with friends.

"Running this company takes 150 percent of my time," she said. "Balance is very challenging."

One compromise: "The Blackberry doesn't come upstairs at night," Froshauer said, referring to the wireless e-mail device that is otherwise her constant companion.

Asked about the difference between male and female leadership at a business, Froshauer said she believes women tolerate a wider range of communication, including emotional debate.

"I have a toleration for more of a broader range of behavior than perhaps a gentleman. Men don't always have a comfort of dealing with emotion," she said.

Froshauer believes she's more willing to solicit opinions and follow the guidance of other senior executives at her company than a man might be.

"I am very transparent as an executive," she said. "I am not concerned about sharing my thinking and getting their input."

Whatever the difference, it appears to be working for Rib-X, which is soliciting another round of venture financing that may arrive as

early as next month.

Stewart Hen, a managing director at Warburg Pincus, the leading investor in Rib-X with a \$31 million stake, said he's encouraged by the company's early pre-clinical test results.

"The first compound has already shown impressive antibiotic activity against the most difficult to treat drug-resistant bacteria," he said.

Hen credited Froshauer's leadership with having advanced the company's progress so quickly.

"Susan's diverse background - really the integration of her business intelligence and her R&D acumen - makes her a much stronger CEO," he said. "It's been really instrumental to her ability to lead the Rib-X enterprise successfully."