

## MEDICAL DRESSINGS ARE SILVER LINING FOR NUCRYST PHARMACEUTICALS

By Jack Mason

Small Times Correspondent

NEW YORK, June 7, 2004 - Wall Street may be skeptical about nanotech companies without proven products or revenues going public, but [Nucryst Pharmaceuticals](#) is making money today on its silver nanoparticle dressings for burns and chronic wounds.

Profitable since 2001, Nucryst is a subsidiary of a Canadian company, the [Westaim Corporation](#), which has \$85 million in cash, no debt and may be a nanotech pure play that even a financial conservative could appreciate.

If a Phase II human trial of Nucryst's nanocrystalline silver material proves effective as a topical treatment for eczema, Westhaim believes the subsidiary would be a good candidate for a public stock offering.

Based in Calgary, Alberta, Westaim is listed on Merrill Lynch's index of public nanotech companies. Westaim's other division, [iFire Technology](#), is developing a thick-film dielectric flat-panel display that it believes could be 30 percent cheaper than LCD TVs.

Nucryst, formerly Westaim Biomedical Corp., first commercialized its [Acticoat dressing](#) for treating burns in 1998. Today the company reports that its products are used in 100 of the 120 burn centers in North America. Nucryst also reported 2003 revenues of \$11 million and \$5 million in profits.

Marvin Wolff, a senior analyst with Paradigm Capital in Toronto, has followed Nucryst since 1997. The company has seen 50 percent quarterly growth over the last two years, but "they've only scratched the surface," in terms of U.S. market penetration, he said, and only begun to expand into international markets.

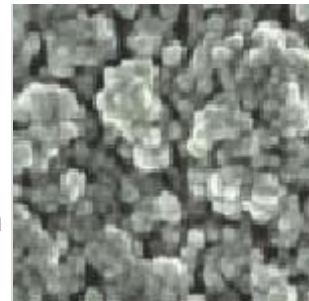


Image courtesy of Acticoat

Magnification of nanocrystalline silver .

[Vital facts about Nucryst Pharmaceuticals](#)

In Wolff's opinion, future growth will come as more doctors become aware of the products and use them more frequently. New variants on burn dressings, such as ones with absorbent layers to speed healing or those that require less frequent changing, will also drive sales.

Nucryst president Scott Gillis said that the company, which has research labs and corporate offices in Wakefield, Mass., produces its SilCryst silver nanoparticles in one of the largest vacuum chamber in North America. Operating in Alberta, the custom-made production tool, called a roll-coater, "looks a little like a submarine," according to Gillis.

The elongated chamber applies particles of silver between 10 and 30 nanometers onto long rolls of dressing materials through a physical vapor deposition process. With the company's first tool running nearly 24 hours a day, Gillis said the company is adding a second system to boost production from 100,000 square meters a year to 150,000 annually.

Silver has long been known to kill bacteria. In Nucryst's nanoparticle form, greater surface area improves its antibacterial effectiveness against 150 types of microbes, including increasingly drug-resistant bacteria. Nucryst reports that its nanosilver kills bacteria in as little as 30 minutes, and acts continuously over several days.

As Gillis explained, the layers of silver nanoparticles gradually enter a burn or wound by mixing with body fluids. Depending on the thickness of the nanoparticles layer, a dressing can last from three to seven days.

The market for burn dressings is about \$50 million, he said. For chronic wounds that can persist for months, such as bedsores, and leg ulcers associated with diabetes or poor circulation, better dressings can prevent serious side effects such as leg amputations.

In 2001, Nucryst partnered with Smith & Nephew plc, a leader in advanced dressings and medical products, for global sales and distribution of its dressings for burns and wounds. In the first quarter of 2004, Smith & Nephew paid Nucryst a \$5 million fee for reaching one of its sales and regulatory milestones.

Analyst Wolff said that Nucryst's relationship with Smith & Nephew, a dominant player in wound management, and its strong patent portfolio are two competitive advantages that have enabled the company to flourish.

"Other companies see this huge gorilla and a well-patented product and may just decide to leave [the market niche] alone," he said. But Wolff said he could envision a company such as Johnson & Johnson wanting to be involved in the topical product if results from the Phase II trial expected later this year are positive.

In addition to its ability to kill bacteria and fungi, Gillis said the SilCryst product has also shown that it can reduce inflammation. That dual function is one of the reasons the company is pursuing new uses as a topical cream for eczema.

Derived from drugs designed to prevent organ rejection, topical immunomodulators (TIMs) can, in rare cases, allow an infection to spread, a problem with a condition like eczema where a person is likely to scratch their skin. By comparison, Gillis said that Nucryst's material could treat inflammation while also fighting infection.

Westaim chief financial officer G.A. "Drew" Fitch said that a decision on taking Nucryst public in the foreseeable future would depend on the results of the Phase II trial that started in April 2003.

Finally, Fitch and Gillis said that Nucryst's process can also produce nanoparticles of other noble metals such gold and platinum that have potential applications in other products. Gillis noted that gold is used today to treat arthritis and platinum is used today to treat cancer.

Other avenues for its SilCryst material might include an inhalable version for treating lung infections and inflammation.

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## **Company file: Nucryst Pharmaceuticals**

*(last updated June 7, 2004)*

**Company:** Nucryst Pharmaceuticals Corp.

**Headquarters:** 50 Audubon Rd, Ste B, Wakefield MA 01880

**History:** Founded in 1998, Nucryst researches, develops and commercializes pharmaceutical products and medical devices using proprietary noble metal nanocrystalline technology. Canada-based Westaim is its parent company, and all product manufacturing takes place in Canada. Nucryst's antimicrobial burn dressing product is used in over 80 percent of major North American burn hospitals and was named a 2002 Product of the Year finalist by Small Times Media.

**Industries potentially served:** Biomedical/Life Sciences, Surgical Tools & Procedures

**Small tech-related products and services:** Nucryst's first product was the Acticoat Burn Dressing, which uses proprietary SILCRYST technology - silver nanocrystals - to aid in wound protection and antibacterial treatment. In December 2003 the company launched Phase 2 clinical trials of a nanocrystalline cream for atopic dermatitis.

**Management:** Scott Gillis, president; Domenic Vatalero, vice president of marketing and operations; and Dr. Paul J. Schechter, vice president of drug development and regulatory affairs; chief medical officer

**Financials:** Most recent annual sales (2001): over \$8 million

**Employees:** 50 - 99

**Selected customers and strategic partners:** Smith & Nephew (Acticoat distributor)

**Selected competitors:** Anson, Nanogist, Johnson & Johnson

**Relevant patents:**

**Lubricious coatings for substrates**

**Antimicrobial bioabsorbable materials**

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