



## Groundbreaking research by Alder starts to pay off

*\$11 million funding / Bothell biotech gets injection of confidence in antibody studies*

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by Kim Peterson / Seattle Times technology reporter

Alder BioPharmaceuticals has spent the past 20 months working on a simpler, more efficient way to mass-produce antibodies — a leap that could make it easier to manufacture drugs based on human proteins.

The Bothell company says its method for making antibodies in yeast cells rather than animal cells is groundbreaking, and could shake up the industry. Venture-capital firms have taken note, and Alder is announcing today that it has received \$11.1 million in its first significant financing. The funding, the company said, gives it the kick needed to take its technology to customers and to develop additional products.

Antibodies are proteins that are naturally made within the body to target and destroy foreign cells. In the lab, biotechnology companies create so-called monoclonal antibodies by implanting a specific strand of DNA in a cell so it mass produces the desired protein.

Some protein-based therapeutics, such as insulin, can be produced in simple bacterial environments. But others are

more complex and must be grown in animal cells.

Doing so isn't easy. It takes time and money just to get enough of the animal cells in which the antibodies are produced — one common cell comes from the ovaries of Chinese hamsters — and that kind of commitment is hard for companies doing early-stage research. Furthermore, building the proper production facilities can take years.

"We recognized some of the shortcomings in the industry," said Randall Schatzman, Alder's president and chief executive. "What we wanted to do was set about identifying a technology that would solve those problems."

That's where yeast enters the picture. Antibodies are generally too large and complex to be manufactured in yeast cells, although chunks of antibodies have been successfully produced in yeast in the past.

Alder says it has found a way to make whole antibodies. In doing so, it essentially tricks the yeast, introducing a gene into yeast cells, isolating ones that react

favorably and produce the desired proteins.

Yeast is much cheaper to work with than animal cells and can reproduce faster. An animal cell takes about 24 hours to double, but yeast can do it in less than an hour, Schatzman said.

Alder isn't alone in this area. Numerous companies are trying to figure out alternative ways to manufacture therapeutic proteins, said Chris Laird, an associate at venture-capital firm Ventures West of Vancouver, B.C. Laird's firm participated in Alder's funding round, which was led by Sevin Rosen Funds in Dallas.

"One thing that attracted us to Alder is that the yeast approach is a lower hurdle," he said.

Alder plans on producing its own biopharmaceuticals in yeast as well. The company isn't disclosing what those products are, but said that the focus is on autoimmune diseases and cancer.

The company has eight employees and plans to expand to as many as 20 in the next nine

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months. It was founded last year by four former employees of Celltech Group, one of the largest biotechnology companies in Europe.

In January of 2004, the company shut down a research facility in Bothell it had acquired through its 1999 merger with Chiroscience.

Schatzman and three other employees began kicking around ideas for what to do next, and Alder was soon born. The name was chosen partly because the large alder tree is one of the

most common types of vegetation in the Northwest, Schatzman said.

By last summer, Alder had received \$500,000 in seed funding from angel investors, including \$250,000 from the investment arm of the Washington Research Foundation. It also contributed an additional \$500,000 in the current round.

Alder also received a \$100,000 grant from the Army — a recognition that the technology might be valuable one day in

quickly making antibodies for defense purposes.

If Alder's technology pans out, it will be significant, said Thong Le, manager of venture investments for WRF Capital.

"In my mind, it can be a paradigm shift in terms of the way people are developing, selecting and manufacturing antibody therapeutics for use," he said.

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