

Zymeworks Snags \$187M Deal With Merck to Discover Multi-Pronged Antibodies

Vancouver, BC, August 29, 2011 – Merck has made plain that it needs to elevate its game in biotech drug development, and that means turning to partners for help. The latest chapter in this ongoing story is now unfolding at a little company called Zymeworks in Vancouver, BC.

Zymeworks is announcing today it has secured a partnership with Whitehouse Station, NJ-based Merck (NYSE: MRK) to develop new antibody drugs for cancer and autoimmune diseases that are engineered to hit two or more targets on cells instead of just one. In exchange for helping Merck create these so-called “bispecific” antibodies, Zymeworks is getting an undisclosed cash fee upfront, plus milestone payments, which could be worth as much as \$187 million over time if drugs from the partnership reach certain goals. Merck will have exclusive worldwide rights to sell drugs from the partnership and Zymeworks will get tiered royalties on product sales if any materialize.

The deal is part of Merck’s long term plan to catch up in the business of biotech drug development. Estimates are that eight of the world’s 10 best-selling drugs in 2014 will be biologic medicines, leaving only two compounds made from chemical synthesis—Merck’s historic wheelhouse. The pharma giant has leaned on another startup, Lebanon, NH-based Adimab, as a source of antibody drug candidates, and it has spoken publicly about its growing ability to make antibodies at its GlycoFi facility and in facilities obtained through its Schering-Plough mega-merger of 2009. But the Zymeworks deal represents a chance for Merck to move into a hot area of protein drug engineering that biotech leaders like Genentech, Amgen, and Biogen Idec have been pursuing for years. “We didn’t invent the field of rational protein engineering, but we have stepped up to take it to the next level,” says Zymeworks founder and CEO Ali Tehrani.

Zymeworks, founded in 2003, has developed a technology for creating lots of custom-designed protein drug candidates with properties drug developers want. The system can be used to make potent proteins that can last longer in the bloodstream, enabling patients to take fewer injections. Zymeworks can also engineer in specific structures that can make an antibody bind specifically and tightly with one or two different targets of interest on diseased cells. And it says the technology can be used to alter proteins to induce what’s known as “effector function,” which basically means that they can be made to trigger an immune system reaction which could give a cancer drug an extra potent boost. The company spent its first four years trying to develop this technology to make industrial enzymes, until it saw bigger market potential in the pharmaceutical business, Tehrani says. “We could have been a mom and pop, coffee shop type of business,” he says.

Zymeworks now has ambitions to become a drug developer of its own, not just a technology provider to Merck and a few other partners, Tehrani says. The company still has a long way to go on that expensive journey. It has 37 employees, has raised less than \$15 million through its history from Montreal-based CTI Life Sciences Fund, the Canadian government, and private investors. It hasn’t yet entered clinical trials with any drug candidates. But Tehrani, who got his microbiology and immunology doctorate from the University of British Columbia, says Zymeworks grabbed the attention of Merck and other prospective partners with “solid” data from experiments with its protein drugs in petri dishes.

Zymeworks certainly isn't the only startup out there with visions of developing better versions of today's protein drugs. Seattle-based [Allozyne](#), San Diego-based [Ambrx](#), South San Francisco-based [Sutro Biopharma](#), and South San Francisco-based [CytomX Therapeutics](#) are just a few startups in that space along with many of the traditional biotech giants mentioned above. Zymeworks seeks to differentiate itself a couple different ways, Tehrani says. One is that it has software to better characterize the properties of the drug candidates, which ought to help researchers predict how they will perform in clinical trials. The other key feature is that Zymeworks can engineer its properties into immunoglobulin class-1 proteins, which Tehrani says offers an advantage over other techniques in manufacturing.

Zymeworks' long-term goal, Tehrani says, is to grow up to be like Applied Molecular Evolution, a San Diego-based protein engineering company acquired by Eli Lilly for \$400 million in 2004. Zymeworks had interest from several partners in its technology, Tehrani says, but chose Merck for a few reasons. First, Merck provided enough validation of the technology, and upfront cash, to help stir up some more interest among investors in putting more capital into the company, Tehrani says. Plus, Merck's development capabilities at its Palo Alto, CA-based biologics facility were a cut above facilities from other companies, he says. "We are protein engineers. They are drug developers with a detailed understanding of biologics," Tehrani says. "We see a long term strategic collaboration."