

## Anaphore's Atrimers Snag up to \$345M from Mitsubishi

By Trista Morrison  
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Anaphore Inc. is expected to announce Monday morning that it has snagged its first big pharma partnership for its Atrimer protein engineering platform, a deal with Mitsubishi Tanabe Pharma Corp. that could be worth up to \$345 million.

Protein scaffolds have been the subject of serious partnering interest over the past few years, with Amgen Inc. acquiring Avidia Inc., GlaxoSmithKline plc acquiring Domantis Ltd. and Bristol-Myers Squibb Co. acquiring Adnexus Therapeutics Inc., not to mention plenty of licensing deals for Ablynx NV and Molecular Partners AG, among others.

What sets Anaphore's approach apart, according to CEO Katherine Bowdish, is that Atrimers are the only fully human trimeric proteins. While many protein-based drugs have one or two binding domains, Atrimers boast three. That's expected to translate into increased potency, all wrapped up in a package that's smaller than an antibody, for better tissue penetration, but larger than other alternative protein scaffold approaches, for a longer half-life.

That was enough to catch the interest of Osaka, Japan-based Mitsubishi. Although Anaphore has an existing research collaboration with an undisclosed partner, Bowdish called the new deal the biotech's "first real partnership."

Under the deal, Mitsubishi has selected an initial autoimmune disease target and acquired a lead candidate from Anaphore.

Although Bowdish said the target was undisclosed, much of Anaphore's research to date has focused on the trimeric TNF superfamily, and the company's lead autoimmune program targets interleukin-23.

Anaphore gets a \$5 million up-front payment for the compound, as well as up to \$110 million in milestone payments and tiered royalties on future sales. The two parties will collaborate up to the point of an investigational new drug application filing, although Mitsubishi will cover all of Anaphore's research costs, and the big pharma will manage further development.

Mitsubishi also has an option to select two additional autoimmune targets, with similar financial terms.

The funding from the deal will help La Jolla, Calif.-based Anaphore advance its own Atrimer pipeline, which includes a lead oncology candidate also targeting the TNF superfamily. Bowdish said the molecule binds death receptor 4 (DR4) and death receptor 5 (DR5) and has generated "fabulous" in vitro data.

Indeed, at last month's EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics, Anaphore presented data showing that its DR4 Atrimers have sub-nanomolar affinity to DR4-Fc and selectively kill DR4-positive cancer cells, while its DR5 Atrimers were equipotent to TRAIL in cell death assays. The most potent of each are being fused; animal studies are under way.

Additionally, Anaphore has earlier-stage preclinical programs focusing on the TNF superfamily, three of which are for oncology and one of which is for autoimmune disease.

Bowdish said Anaphore plans to form additional partnerships in its target fields of autoimmune disease and cancer, and the biotech would also be willing to partner with companies that supply their own targets.

Not that Anaphore necessarily needs the supplemental income: The biotech raised \$25 million in a Series A round in early 2009, and it added another \$13 million a few months later. (See *BioWorld Today*, Jan. 7, 2009, and May 14, 2009.)

In fact, Anaphore first met Mitsubishi when its venture division was looking at investing in the biotech's Series A. When Anaphore later learned that the pharma's San Diego subsidiary, Tanabe Research Laboratories U.S.A. Inc., was refocusing on biologics for autoimmune disease, Bowdish decided it was time to reconnect.

Anaphore initially projected its Series A funding would last about three years. With the newly added partnering money, "we have a good, strong cash position," Bowdish confirmed. ■

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