

BioCentury

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Strategy

Cracking the code

By **Erin McCallister**
Senior Writer

While most Japanese biotechs struggle to get deals done with international partners, **Chiome Bioscience Inc.**'s strategy to use experienced consultants and adapt its technology to incorporate its partners' feedback has allowed the antibody discovery company to do three deals with U.S. and European companies in the last six months.

Since January 2011, there have been about 19 deals between Japanese biotechs and U.S. or European companies that go beyond Japan-only rights. All but one company — Chiome — did only a single deal.

All three of Chiome's recent partnerships were for its Autonomously Diversifying Library (ADLib) technology.

Under the most recent deal, announced this month, Chiome will use ADLib to generate mAbs for **GlaxoSmithKline plc.** GSK has an option to develop compounds generated under the deal. Details were not disclosed.

Chiome did a similar deal with cancer company **OncoMed Pharmaceuticals Inc.** in December, as well as a deal with **Five Prime Therapeutics Inc.** last November.

Chiome also has a 2007 mAb discovery deal with **Chugai Pharmaceutical Co. Ltd.**, which is majority owned by **Roche.**

CEO Masa Fujiwara credits Chiome's success to the company's consultants in the U.S. and Europe, as well as improvements to the ADLib technology based on partner feedback.

"We are using consultants who have extensive experience in the industry and a good network of people at bioventure and pharmaceutical companies in the U.S. and Europe," Fujiwara said.

Chiome's U.S. consultant is Martina Molsbergen, who worked previously as director of business development at **Kyowa Hakko Kirin Co. Ltd.**'s BioWa Inc. subsidiary in the U.S. At BioWa, she helped to set up deals for the company's Potelligent technology, which increases antibody-dependent cellular cytotoxicity (ADCC).

During her time at BioWa, Molsbergen negotiated 15 deals, including a 2006 deal with Roche's **Genentech Inc.** unit to use Potelligent with undisclosed antibodies.

BioWa has done numerous deals for Potelligent, including three in 2011.

Chiome's European consultant is Fritz Rudert, formerly head of business development at **Xerion Pharmaceutical AG** and senior staff scientist in the functional genomics research group at **MorphoSys AG.**

According to Fujiwara, using consultants has allowed Chiome to efficiently expand its footprint outside of Japan.

"We are a small company in Japan, and we don't have a very expansive network. The consultants are quite helpful in representing us in the U.S. and Europe and making the introduction for us with potential partners," he said.

The consultants not only make the initial introductions between Chiome and the partners, but they also are on hand during Chiome's technology presentations and help negotiate and draft the contracts.

"If we didn't have the U.S. consultant, we wouldn't be as successful as we are now," said Shigeru Kobayashi, executive director of business development.

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Masa Fujiwara, Chiome

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According to Molsbergen, use of U.S. and European consultants is somewhat rare in Japan. More typically, she said, companies will open subsidiaries or regional satellite offices.

That was the case for Kyowa, which opened BioWa in Princeton, N.J., in 2003 to license the company's technology.

While U.S. or European subsidiaries are a "viable option," according to Kobayashi, Chiome has chosen to use consultants "because of the cost and benefit balance."

However, the consultants are only half of the equation. "The business development and technology are related," Fujiwara said.

Thus, Chiome has used its interactions with other companies to improve the ADLib platform.

ADLib uses chicken B cell lines to generate antibodies in 10 days. Other systems can take about six months (see *BioCentury*, Feb. 16, 2009).

Most recently, Chiome has added a

mouse chimeric library. For nonclinical study of the antibodies in mice, the chicken IgMs generated with the ADLib system need to be converted to mice chimera, which can take about four to five weeks and erase some of the time savings of using ADLib.

"Now, from our client's point of view, they can use the IgG chimeric antibodies right after generation by the IgG ADLib system and save four to five weeks for chimerization," Kobayashi said.

The biotech also has been able to develop antibodies against antigens that bind transmembrane receptors like G protein-coupled receptors (GPCRs).

"There are a lot of antibody targets that cannot be overcome with currently available technologies, especially GPCRs. We generated our own method, axCELL, and it has been very attractive to potential clients," Fujiwara said.

Unlike other systems that use liposomes or artificial membranes to express an antigen, axCELL uses cells capable of expressing a target antigen on their surface so the epitopes of interest are revealed in their natural 3-D conformation.

Chiome also is working on its own antibodies. The biotech has a discovery stage program focused on an anti-semaphorin 3A (SEMA3A) antibody for autoimmune and neurological diseases. The company expects to seek a development partner for its in-house program.

COMPANIES AND INSTITUTIONS MENTIONED

Chiome Bioscience Inc. (Tokyo:4583), Tokyo, Japan

Chugai Pharmaceutical Co. Ltd. (Tokyo:4519), Tokyo, Japan

Five Prime Therapeutics Inc., South San Francisco, Calif.

Genentech Inc., South San Francisco, Calif.

GlaxoSmithKline plc (LSE:GSK; NYSE:GSK), London, U.K.

Kyowa Hakko Kirin Co. Ltd. (Tokyo:4151), Tokyo, Japan

MorphoSys AG (Xetra:MOR; Pink:MPSYF), Martinsried, Germany

OncoMed Pharmaceuticals Inc., Redwood City, Calif.

Roche (SIX:ROG; OTCQX:RHHBY), Basel, Switzerland

Xerion Pharmaceutical AG, Munich, Germany