conjugate candidate, is a human anti-CD70 mAb linked to a prodrug form of CC-1065, an alkylating agent first isolated from *Streptomyces zelensis*, which binds the minor groove of B-DNA. MDX-1203 is currently in a phase 1 trial for advanced or recurrent renal cell carcinoma and relapsed or refractory B-cell non-Hodgkin's lymphoma.

All along, Medarex seems to have played its cards particularly well. Besides building up an impressive pipeline, "they've done a great job getting partners," says Ansell, netting over 35 worldwide. Analysts were mostly bullish about their latest deal, saying the price was right and that it was good for shareholders of both companies. "BMS gets a stream of royalties from some big products and it bolsters their oncology pipeline significantly," Ansell notes.

The deal draws to a close the acquisitions of public biotech companies that pioneered first-generation mAb technology. "All of the other companies with leading antibody platforms have already been acquired," says Wayland, Massachusetts–based analyst Allan Haberman. Those included Genentech, acquired by Basel-based Roche; Celltech, bought by Brussels-based UCB; Applied Molecular Evolution, bought by Indianapolis-based Eli Lilly; Idec, acquired by Cambridge, Massachusetts–based BiogenIdec; Cambridge Antibody Technology sold to Cambridge, UK–based MedImmune/Astra Zeneca; and Abgenix bought by Thousand Oaks, California–based Amgen.

Attention is now moving to the remaining companies with proprietary antibody platforms, including Ablynx, of Ghent, Belgium; Regeneron, of Tarrytown, New York; and Seattle Genetics, of Seattle. Indeed, Janice Reichert of the Boston-based Tufts Center for the Study of Drug Development thinks there is still room for improvement in the properties of clinical antibodies. Although the dominant full-length mAb technologies will continue their reign for a while, "In the long term, other types of targeted protein therapeutics such as the antibody fragments and alternative scaffolds will progress," she says.

That means that business transactions centered on mAb fragments could be on the up. Three antibody fragments have already been approved for sale in the US and more are coming (*Nat. Biotechnol.* **27**, 331–337, 2009). Indeed, Haberman predicts that pharma will still be doing a lot of shopping. Certainly, BMS is still on the hunt. "As our CEO Jim Cornelius said," Henry notes, "'We celebrated the deal on Wednesday, and on Friday we were back looking for others.'"

Of course, not all partnerships or acquisitions turn out the way they are intended to. As pharmas have gotten bigger and bigger, there have been growing concerns about how they work with smaller partners. Henry says that BMS collaborates well, giving small companies the room they need to stay innovative. "The Adnexus agreement is a great example of how we do it differently," he says. BMS acquired Adnexus not just for its products but its people as well, according to Henry. "They have been free to explore and keep working on the compounds that they were working on before, and to keep that entrepreneurial spirit alive."

Malorye Allison *Acton, Massachusetts*

Details
Vernalis will apply its structure-based drug design technologies to pursue an undisclosed target. Vernalis is responsible for drug discovery activities and GSK for preclinical development. GSK has an option to license any resulting products and would then handle development and commercialization. Vernalis receives $6 million upfront (including a $3 million equity stake by GSK), though total payments with milestones could surpass $200 million. Royalties are also included.
Novartis is paying $3 million in upfront cash, plus $1 million in technology transfer fees, for an exclusive license to Opexa's preclinical stem cell technology. Total payments to Opexa, including development and commercial milestone payments, could exceed $50 million before royalties. The adult stem cell technology is designed to produce monocyte-derived islet cells from peripheral blood mononuclear cells.
The companies will collaborate on conjugated aptamer-microRNA therapies capable of intracellular delivery and subsequent microRNA targeting. miRagen and Archemix will jointly pursue R&D efforts, and both companies will contribute resources, though miRagen can negotiate for full rights to any resulting products.
The companies are seeking to create antibody-based products targeted to G protein–coupled receptors and other targets in the cell membrane. MSM will display selected targets in their native form and work with Merck Serono's scientists to apply these in various drug discovery platforms. MSM receives an upfront sum and could receive milestone payments and royalties.
The firms will develop targeted vaccines against cancers such as melanoma and chronic lymphocytic leukemia, and infectious diseases such as AIDS. Immunomedics and its majority-owned subsidiary, IBC Pharmaceuticals, will supply the Dock-and-Lock conjugation technology, whereas Alexis Biotech will offer its human leukocyte antibody–antibody targeting technology. The companies will share costs, and Immunomedics will have first worldwide commercialization rights to any products.

IN brief

Big oil bucks for algae

Synthetic Genomics

Algae growing at Synthetic Genomics' labs.

Houston-based ExxonMobil has made its first big investment into alternative energy with a $600 million deal to make fuel from algae. The company's agreement with Synthetic Genomics, of La Jolla, California, announced on July 14, is the single largest research program to date in the biofuels space. Algae as a source of fuel are attractive from an environmental standpoint because they actively consume carbon dioxide, have greater energy density than plant-based feedstocks, and can be grown on marginal land, using wastewater or ocean water. From an engineering perspective they are also advantageous, as oil companies can integrate algal biofuels into their existing infrastructure. "Most likely we'll be producing hydrocarbons that will look a lot like intermediary streams in a refinery," Emil Jacobs, vice president of R&D at ExxonMobil Research and Engineering, said on a press conference call. The biotech company's cofounder and CEO Craig Venter explained that "one of the advances we've made at Synthetic Genomics is making cells that actually secrete the hydrocarbons into the solution, in a pure form, which potentially changes it from a farming process to a bioreactor program." ExxonMobil's move into third-generation biofuels coincides with a degree of retrenchment on the part of rivals such as BP, who are cutting capital expenditure and operating costs on the back of plummeting profits. "I think they've very much gone back to what they would see as their core business model," says Andrew Logan, from Ceres, a Boston-based not-for-profit organization, which tracks the environmental performance of large corporations. Also in July, London-based BP exited a joint venture with D1 Oils of London to make biodiesel from *Jatropha curcas* seeds. BP spokesman David Nicholas, says its other academic and commercial partnerships in biofuels remain intact. Indeed, on August 11, BP entered a $10 million alliance with Martek Biosciences, of Columbia, Maryland, to explore the potential of using the latter firm's technology for converting biomass-derived sugars to microbial oils for biodiesel production. Nevertheless, the oil industry as a whole remains firmly interested in, but not yet fully committed to, building a large-scale biofuels business. Whether ExxonMobil, long regarded as a laggard in the alternative energy space, will now engage more fully with renewable fuels is unclear. "The scale and scope of their investments are quite modest compared to the scale and scope of the challenge," says Logan. The US Department of Energy is also renewing its interest in the area, recently committing $85 million to fund further research. Algal biofuels are still five to ten years from achieving commercial scale. *Cormac Sheridan*