JAPAN ROUNDUP

Japan's Ministry of International Trade and Industry (MITI) is likely to begin a six-year, 30 billion yen national project for protein engineering starting next April. The program includes the design of proteins and synthesis of enzymes and antibodies. Support will come from private companies, universities, and national research organizations. The goals of the project are to clarify relationships between protein structures and functions, and to design and synthesize new proteins.

Also, a technology division of MITI began discussing standardization methods, based on the Japanese Industrial Standard, for 48 test items in biotechnology.

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As part of its biomass conversion project, the Japanese National Food Research Institute of the Ministry of Agriculture, Forestry, and Fisheries began tests on a new alchohol fermentation process which can produce ethyl alcohol from crude starch. The traditional method of alcohol fermentation starts with waste molasses. Research is being conducted by Nippon Denpun Kogyo K.K. (Kagoshima). A new ethyl alcohol process could thus follow developments of novel production methods for such products as isomerized sugar, cyclodextrin, and malt oligosaccharide.

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Toyo Soda (Tokyo) is now using a human growth hormone production technique developed by the Science & Technology Agency and an Osaka University team.

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Japanese pharmaceutical, chemical, and food firms are continuing to enter into biotech collaborations with U.S. companies. Chugai Pharmaceutical Co. (Tokyo) has been licensed by Genetics Institute to produce genetically engineered erythropoietin; Sekisui Chemical Co. (Osaka) will evaluate Cetus's monoclonal antibodies for use in a diagnostic test kit, and has the option to license for sale in the Far East; and Yamanouchi Pharmaceutical (Tokyo) and Biogen (Cambridge, MA) agreed to develop lipocortin in Japan, Taiwan, and South Korea.

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Nippon Kagaku Co. (Tokyo) hopes to complete construction of production facilities for biotech-related products at the site of its Takasaki factory (Gunma Prefecture). The company is investing 200 million yen in the project to make new diagnostic reagents and anti-cancer agents using monoclonal antibodies, a new nucleic acid derivative "YNK-01," and forskolin, an agent which has proven effective against glaucoma.

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Pharmacia (Japan) K.K. has begun a biotechnology department for its biotech business and has opened a separation center (Tamatsukuri, Ibaraki Prefecture) to train personnel and conduct research.

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Seiwa Kasei Co., Ltd. (Osaka), a manufacturer of protein products, has appointed Inolex Chemical Co. as the sole U.S. and Canadian distributor of its protein derivatives.

MEETING REPORT

MONEY FOR PLANTS DOESN'T GROW ON TREES

DAVIS, Calif.—Current yearly spending for R&D on agricultural biotechnology amounts to hundreds of millions of dollars. Sales of such products will reach $100 million in the 1990s and top $1 billion soon after the turn of the century. As for now, according to David Wheat, senior agribusiness consultant for Arthur D. Little (Cambridge, MA), sales of these products are only at the $1 million level—when rounded up to the nearest million, that is. Wheat was speaking to an unusual assembly of entrepreneurs, venture capitalists, investment bankers, and corporate executives at a May meeting here: "Agricultural Biotechnology: Finance, Acquisitions and Joint Ventures."

The conference was marked by optimism about the promise of agricultural biotech, but fraught with questions about how to fund further development. When taking a company public, investment bankers like to see profits or products nearing market—not characteristics of most agricultural biotechnology start-ups. "The 'agricultural' is an anathema to the investing public; the 'biotechnology' is an enigma," quipped William J. Patton of First Affiliated Securities (San Diego, CA). He added that there is a real burden to becoming public: "A company that goes public for $3 million has to do the same things every quarter as IBM does."

Richard A. Bock of Bear, Stearns & Co. (Los Angeles, CA) pointed out that, of some 126 publicly owned companies focusing on biotech, only six are selling above their issuing price. "They simply don't know how to promote themselves and get their message across to Wall Street," he lamented.

Going public, warned Mary C. Tanner, managing director at Lehman Brothers (New York, NY), sets a value on your company. Corporate investors prefer buying into private companies; even if they do decide to invest in a public firm, they will probably be unwilling to pay much of a premium over stock price.

Tanner also treated her audience to her version of every underwriter's three favorite white lies:

- We're glad IBM is entering the market because it validates the field;
- These projections are clearly conservative and were not made with financing in mind; and
- None of our insiders or venture capitalists intend to sell their stock in the after-market.

Private markets, including corporate partners, venture capital, and insurance funds, were regarded as having more near-term promise for raising money. Leib Orlanski, chairman of the meeting and a partner at Freshman, Marantz, Orlanski, Comsky & Deutsch (Beverly Hills, CA) listed more than 20 venture capital organizations that have invested in plant biotechnology. With only some 15 free-standing, independent agricultural biotech companies out there, he noted, "The agricultural biotechnology corporate world is an extremely finite world."

Many major corporations have already invested in biotech companies, especially in those focusing on agriculture. Orlanski suggested that eventually corporate partners may overtake both the public equity markets and venture capital as a financing vehicle. **—Arthur Klausner**