

## JAPAN ROUNDUP

The Ministry of International Trade and Industry (MITI) is starting a 10-year "Biochip Project" through its Exploratory Research for Advanced Technology program (ERATO). The 8–10 billion-yen project aims to involve industry, academia, and government in researching information processing mechanisms in lower animal nervous systems, examining biochemical reactions in biological organic materials, and establishing production and processing technology for organized molecular complexes and membranes.

Shimazu Corp. has developed a new automatic mass cell fusion device that fuses animal or plant cells simultaneously by setting optimum conditions for electric cell fusion.

A biosensor which can detect minute substances has been developed by a team of researchers led by Professors Seiko and Karube of The Tokyo Institute of Technology. This technique is more precise and has a lower pro-

duction cost than the conventional methods of measurement.

Five Japanese companies have agreed to establish a joint protein engineering company within one year. The companies are: Mitsubishi Chemical Industries Ltd. (Tokyo), Kyowa Hakko Kogyo Co. (Tokyo), Takeda Chemical Industries Ltd. (Osaka), Toray Industries, Inc. (Tokyo), and Toa Nenryo Kogyo K.K. The group plans to research X-ray analysis, nuclear magnetic resonance, electron microscopes, and computer-aided graphics.

Sumitomo Pharmaceuticals (Osaka) will begin using tPA (tissue plasminogen activator) production technology from the Wellcome Foundation (U.K.) in its production of tPA samples.

Nikken Chemicals, a specialist in ethical medicines, and the Japanese National Food Research Institute of the Ministry of Agriculture, Forestry and Fisheries (MAFF) have developed a

new sugar alcohol-producing yeast. Reportedly, this is the first time sugar alcohol has been made by fermentation, versus the traditional chemical reaction. Nikken hopes to export erythritol produced by fermentation next year, while it is researching a more economical bioreactor.

Sankyo (Tokyo), a leader in pharmaceuticals, has produced a recombinant elastase which may aid in the prevention and cure of arteriosclerosis. The company transfected the DNA of pig-elastase into both *Escherichia coli* and cultured monkey cells. The elastase thus produced is identical in structure and efficacy to the natural elastase.

Kyodo Shiryō developed a new technique for commercialized seed preservation which can be applied to seeds that are usually not resistant to cold-storage. The seeds are lyophilized in a culture medium of agar or gelatin and nutritives, under 30°C in vacuum.

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