JAPAN ROUNDUP/

Thirty-six Japanese companies have agreed to participate in a program—under the auspices of the Japanese Ministry of Public Welfare—to develop drugs to treat AIDS (acquired immunodeficiency syndrome) and AIDS-related diseases. The research will focus on five areas: drugs to kill the HIV (human immunodeficiency virus) directly; drugs to prevent the development of AIDS following infection by HIV; drugs to treat the associated diseases Carinii pneumonia and Kaposi's sarcoma; reagents and equipment for diagnosing AIDS; and methods for evaluating the effectiveness of anti-AIDS drugs.

Companies participating in this program include major pharmaceutical houses and leading biotechnology firms: Chugai Pharmaceuticals (Tokyo), Shionogi Pharmaceuticals (Osaka), Dai-Nippon Ink Chemical Industries (Tokyo), Mitsui Toatsu (Tokyo), Asahi Kasei (Tokyo), and Toray Inc.

(Tokyo). The program budget for next year will be about 43 million yen.

Researchers at the Osaka Metropolitan Public Health Research Institute and Tottori University Medical School (Tottori) have discovered that the sulfonated derivative of amphotericin B, an antibiotic used to treat Candida infections, is effective in inhibiting HIV replication.

According to Toru Otake of the Public Health Research Institute, addition of sulfonated amphotericin B to a T cell lymphocyte-derived cell line protects those cells from viral destruction. In the absence of the antibiotic, the virus kills the cells within four to six days. The sulfonated antibiotic also protects T cell lymphocytes isolated from normal individuals.

Amphotericin B is difficult to use because of its high toxicity: it kills cells at concentrations greater than 50 micrograms per milliliter. In contrast,

sulfonated amphotericin B is non-toxic at much higher concentrations.

Pseudomonas may not be the only bacterial strain capable of producing ice-nucleating substances. Researchers at Kansai University (Suita City), led by Satoshi Obata, have identified a substance—probably a protein—secreted by cultures of *Erwinia* that Obata isolated from strawberry plants. The substance forms spherical particles 25 nanometers in diameter and causes ice crystals to form at temperatures greater than 0° C. Obata is exploring its commercial potential, given the fact that a (different) strain of ice-nucleating bacteria has already been used to make artificial snow for 1988's Calgary Olympics.

Prepared by Hal Plotkin and Ken Coleman, Biotechnology in Japan Newsservice, Japan Pacific Associates (Palo Alto, CA).

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