JAPAN ROUNDUP

Scientists at the Industrial Research Council's Research Institute for Techniques in Industrial Microbiology (Tokyo) have discovered a new biopolymer that can absorb 500 times its own weight in salt water. Its ability to absorb fresh water is even greater—one gram can absorb one liter. Unlike current synthetic polymers, which have significantly lower absorptive properties for water containing solutes, the biopolymer's absorptive properties remain high. The researchers isolated this biopolymer from the medium used to grow a strain of *Alcaligenes latus*. Because the biopolymer is synthesized by bacteria, it may prove cheaper to produce than today's synthetic polymers.

Allergies to milk are frequently immune reactions to the peptides that are produced as casein is digested. Individuals with poor suppressor T lymphocyte function cannot suppress this immune response, and instead they overproduce antibodies to the

casein-derived peptides.

Tokyo University investigators Kunio Yamanouchi and Shuichi Uenokawa (School of Agriculture), together with Tomio Tada (School of Medicine), are probing the molecular mechanisms of milk allergies. The scientists injected mice with a subtype of bovine casein and then isolated immune cells from the lymphatic fluid. These suppressor T cells also respond to casein-derived peptides. The researchers have succeeded in culturing these cells *in vitro*: they claim this is the first report on culturing suppressor T cells under conditions in which they remain functionally intact.

Researchers at Nippon Tobacco Co. (Tokyo) have genetically engineered *Escherichia coli* to produce the human enzyme 5-lipoxygenase. This enzyme catalyzes the oxidation of arachidonic acid to 5-HPETE (5-hydroperoxyeicosatetraenoic acid), the precursor of a family of physiologically active substances known as leukotrienes. Leu-

kotriene B4 (LTB-4), for example, plays an important role in allergic reactions by inducing inflammation of alveoli and contraction of the smooth muscles lining the bronchial airways.

The scientists isolated the cDNA for 5-lipoxygenase and introduced it into *E. coli* via a hybrid expression plasmid. The enzyme made by the bacteria has the same molecular weight (78,000) and activity as the authentic enzyme.

Although yields of the recombinant enzyme are still low, the researchers expect that—once they improve the expression plasmid and culture conditions—they should get about 100 milligrams enzyme per liter. Once large amounts of 5-lipoxygenase are available, it should be easier to develop enzyme inhibitors.

Abstracted from Biotechnology in Japan Newsservice by Yoriko Kishimoto and Ken Coleman, Japan Pacific Associates (Palo Alto, CA).

**Purify up to 10 grams
of Monoclonal Antibody
per hour!**

INPUT
(5-10 liters/min)
serum, ascites,
cell culture
supernatants

OUTPUT
98%+
pure IgG

MASS 1 gram device

Proven Membrane Affinity Separation System

provides 98%+ purity with 85%+ yield on first pass.

- **Cost effective and reusable.** . . maximum ligand binding of IgG is maintained even after 100 separations.
- **High flow rates. . . NO concentration dependency.** . . 10 to 1000 times higher flow rates than gel columns and HPLC. . . over a wide range of concentrations. . . at pressures of 1 to 5 psig.
- **Easy to use.** . . pass sample through. . . wash away contaminants. . . elute 98%+ pure IgG.
- **Designed for biopharmaceutical use.** . . ligand leaching is less than 10 parts per million.

Our Bioseparations Specialists will be happy to discuss your application with you. . .

Call 1-800-622-3280

NYGENE NYGene Corp.
One Odell Plaza, Yonkers, NY 10701
The Leader in Membrane Bioseparations

We are pleased to announce that

DELPHI BioVENTURES

(A Private Venture Capital Partnership)

Has Been Capitalized At

\$43,000,000

In Limited Partner Interests

James J. Bochnowski Costa G. Sevastopoulos

General Partners

DELPHI MANAGEMENT PARTNERS

3000 Sand Hill Road
Building 1, Suite 135
Menlo Park, California 94025
(415) 854-9850

March, 1989

Write in No. 177 on Reader Service Card

Write in No. 107 on Reader Service Card