

JAPAN ROUNDUP

Mitsuo Matsuura and co-workers at Kyoto University have used bleomycin to cut DNA selectively. Although researchers knew this anti-tumor drug cleaves DNA, they had not realized that the cleavage could be made site-specific and more efficient in the presence of activated oxygen and iron. The new method cuts DNA between guanosine-cytidine and guano-

sine-thymidine pairs with nearly 100-percent efficiency. And the increased ability of bleomycin to cleave DNA may also lead to more effective anti-cancer therapies.

A research collaboration between Suntory (Tokyo) and the plant pathology department of Tokyo University has yielded an ELISA (en-

zyme-linked immunosorbant assay) that detects a grape-infecting virus within 20 minutes. This is a vast improvement over current methods, which take up to a year. The virus is important because it often causes grapes to lose nearly 95 percent of their sugar content, resulting in inferior wine production.

Kikkoman Corp. (Chiba) scientists used protoplast fusion to create the first reported hybrids derived from cells of navel and mandarin oranges and from navel oranges and grapefruits. Hybrid plants regenerated from tissue calluses have grown to heights of 5-15 centimeters and, to the extent it has been possible to measure, retain some traits of both parents. For instance, the hybrid navel-mandarin orange plants express RNA molecules characteristic of each parent, opening up the possibility that the new fruits will be palatable and have improved taste and yield.

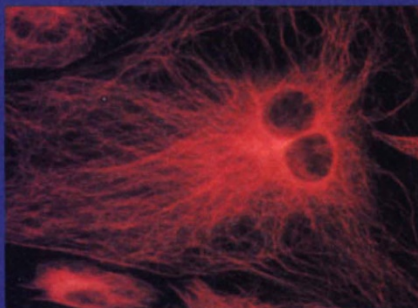
Chemists at Meiji Milk Industries (Tokyo) have isolated a 16,000-18,000-Dalton glycoprotein from mushrooms that may prove useful in treating a variety of allergies. The glycoprotein indirectly prevents the development of reactions to common allergens like pollen by stimulating helper T cells, thereby restoring the normal ratio of suppressor to helper lymphocytes. The glycoprotein, which is expected to reach the clinic next year, may also be useful for suppressing rejection of transplanted organs.

Researchers at Ozeki Chemical Industries have developed a method for harnessing the heat produced by microbial fermentation to melt pavement snow and ice. The method relies on the metabolic activity of microbes as a stable, low-cost source of heat to produce warm water that is circulated through pipes embedded in asphalt. Possible uses for this new all-weather pavement include airport runways and highway bridges. The cost of installing the system should be approximately \$100 per square meter.

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

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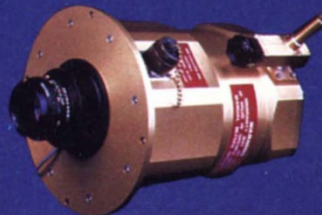
Swiss 3T3 cell labelled with an antibody to tubulin. The antibody is labelled with a new cyanine dye that emits with a peak of 670nm. (Enhanced by pseudocolor) Photo courtesy of Dr. Lansing Taylor Center for Fluorescence Research in Biomedical Sciences



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