JAPAN ROUNDUP

Researchers at Nippon Kayaku (Tokyo), working in collaboration with Katsushi Ishii at the Saitama Prefectural Research Center, have developed a new enzyme-linked immunoassay for early detection of cancers of the urinary tract and reproductive organs. The test uses a monoclonal antibody that binds to basic fetal protein (BFP). BFP, which Ishii discovered in 1974, is produced by many cells of the developing fetus but not by normal adult cells. The protein is made by certain tumor cells, however, and the presence of BFP in the serum is a good early predictor for stomach, colon, bladder, urinary tract, prostate gland, and uterus cancers. Nippon Kayaku plans to apply to the Japanese government soon for permission to manufacture the test and hopes to offer a diagnostic kit by next summer.

Researchers at Ace Pharmaceuticals, working in collaboration with scientists at the Ministry of Agriculture, Forestry and Fisheries, have used recombinant DNA techniques to isolate the structural gene for a growth hormone in red sea bream (*Chrysophrys major*). The team is now focusing on mass-producing this hormone in *Escherichia coli* for use in commercial fish production. The amino acid sequence of the 186 residues that follow the signal peptide is 68 percent homologous to white salmon growth hormone and 45 percent homologous to eel growth hormone.

Scientists at Kyowa Hakko Kogyo Co. (Tokyo) have cloned the structural gene for human lymphotoxin and mass-produced the protein in *E. coli* at levels of up to five percent of the total bacterial protein. Purification steps yielded highly stable human lymphotoxin that was 57–90 percent pure. Lymphotoxin, a 157-amino-acid protein naturally produced by lymphocytes, kills some cancer cells without damaging normal cells. The structural gene for human lymphotoxin was first cloned by scientists at Genentech (South San Francisco, CA); Kyowa Hakko researchers used the published DNA and protein sequences to re-isolate the gene in-house. Although all the versions of the human lymphotoxin gene cloned by Kyowa contain short deletions at

the beginning of the structural gene, the researchers found these recombinant proteins to have higher cancer cell-killing activities than native lymphotoxin.

Scientists at Asahi Breweries (Tokyo) have synthesized a peptide that, at very low concentrations, lowers high blood pressure caused by defects in the renin-angiotensin-aldosterone (RAA) system. RAA disorders represent the most frequent cause of high blood pressure. The peptide works by inhibiting angiotensin-converting enzyme (ACE), a liver protease that cleaves the decapeptide angiotensin-1 to form angiotensin-2. It is the accumulation of angiotensin-2 in the serum that causes blood vessels to contract, resulting in an increase in blood pressure. Although Squibb Corp. (Princeton, NJ) and Merck (Rahway, NJ) already market synthetic inhibitors of ACE, Asahi's peptide may prove more potent. If so, it could be administered at lower doses, thereby decreasing the risk of unwanted side effects. Asahi is currently upgrading its testing of the peptide from studies with rats to studies with dogs, and will increase production from the several hundred milligrams-scale to the tens of grams-scale by the spring.

A new drug developed at Dainippon Pharmaceuticals (Osaka) rids animal cell cultures of contaminating mycoplasma within one week. Mycoplasma—small, wall-less cells that invade and colonize larger eukaryotic cells—are common contaminants. For example, an estimated 30 percent of all cells stored in the Japanese cell bank may be infected. The new anti-mycoplasma drug, designated MC-110, is a derivative of quinolonecarboxylic acid. It clears a wide range of mycoplasma types from cells and, when added to the culture medium, can prevent re-infection. MC-110 is anticipated to sell for about 15,000 yen (\$120) per 50 milliliter bottle. Although drugs that prevent infection by mycoplasma are already available, this is the first to clear these organisms from already-infected cell lines.

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LEGISLATION

BILL ON BIOTECH

WASHINGTON, D.C.—Three influential senators, Edward Kennedy (D-MA), Lawton Chiles (D-FL), and Pete Domenici (R-NM), with the added backing of Senators Patrick Leahy (D-VT) and Bob Graham (D-FL), submitted a new bill (S-1967) late last year. Divided into three parts, the "Biotechnology Competitiveness Act of 1987" addresses regulation and funding of the U.S. biotech effort, the proposed project to sequence the human genome, and programs managed through the National Library of Medicine (NLM).

Perhaps the most intriguing new proposals in S-1967 are its provisions to create a free-standing National Biotechnology Policy Board. Similar to the new Committee on Life Sciences being created within the President's Office of Science and Technology Policy (see *Bio/Technology* 6:19, Jan.'88), the board would "review and appraise" overall U.S. research efforts in biotech—in the federal sector as well as industry. Besides examining regulatory policies, the board also would advise the President on program-funding and other matters—such as personnel training, technology transfer, and tax incentives—that affect the industry's ability to compete internationally. The proposed board would include representatives from virtually every federal department overseeing biological research, from the academic and industrial sectors, and from private foundations; it would be rounded out by including an expert in biomedical ethics.

By establishing a National Advisory Panel on the Human Genome, the bill absorbs and modifies several of the legislative recommendations made earlier by Domenici (see *Bio/Technology* 5:1016, Oct. '87). He had proposed making the Department of Energy's (DOE) National Laboratories the hub of a new "human genome consortium," which also was to involve the National Institutes of Health (NIH), universities, and industry. The new bill specifies that the advisory panel would be chaired jointly by the NIH director and the head of DOE—thus offering a way to finesse the turf battle between federal agencies for project leadership.

Finally, S-1967 would establish a National Center for Biotechnology Information within NLM. The bill authorizes annual appropriations of \$10 million through fiscal year 1993 for coordinating the masses of biotechnology information now accumulating worldwide. —Jeffrey L. Fox