RANDOM SAMPLES

edited by FAYE FLAM

Congress May Reform Biotech Patenting

The new Congress isn't wasting any time trying to help the biotech industry. Last week, the House and Senate each introduced a bill that would make it easier for biotech firms to win patents on manufacturing processes.

Companies can't patent substances that occur in nature, so they've relied on patenting processes, such as recombinant DNA techniques, that make such substances. But biotech firms often get emmeshed in disputes with each other and the U.S. Patent and Trademark Office because the law that governs process patents is fuzzy about what kinds of processes are patentable. The bills would make it easier by allowing patents on any "nonobvious" biotech process. In addition, the bills would protect U.S. biotech firms from patent infringement by foreign companies, making firms that operate in the United States liable to damages if they import pirated biotech products. "I have no doubt that the current state of the law is retarding U.S. investment in biotech," Representative Rick Boucher (D–VA), sponsor of the House bill, told *Science*. Senators Dennis DeConcini (D–AZ) and Orrin Hatch (R–UT) sponsored the Senate version.

The bills are similar to one that nearly passed the Senate last fall but fell prey to politics when Senator Howard Metzenbaum (D–OH) threatened a filibuster. Boucher, however, believes this bill has a better chance. "Last year we were seeking a more generic fix," he says. Boucher says the bills are on a "very fast track."

Scant Supply of New Sickle Cell Drug

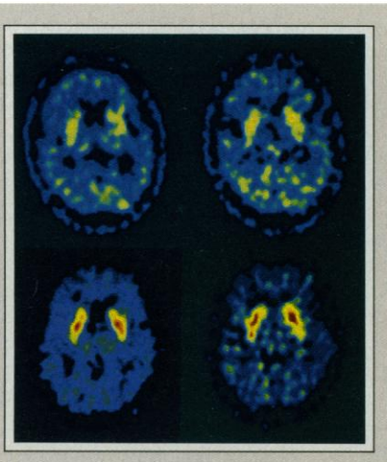
Last month, the press carried hopeful accounts about the newly recognized therapeutic potential of a commonly used food additive, butyrate, for sufferers of the blood disorders sickle cell anemia and beta thallasemia. Overlooked in much of the reporting, though, was a serious practical problem: No drug company is prepared to market butyrate as a pharmaceutical, even though it is used for such things as making artificial flavorings.

The good news about butyrate came from a report in the 14 January *New England Journal of Medicine*, written by a team of hematologists led by Susan P. Perrine of Children's Hospital in Oakland. Most symptoms of all six patients in the small study disappeared after injections of this simple organic molecule, which shows up in butter and other sundry places. Moreover, unlike other drugs for such blood disorders, butyrate appears free of significant side effects.

How butyrate does its medicine seems clear: Victims of the blood disorders possess a pair of hemoglobin genes, one of which codes for a crippled form of hemoglobin, but butyrate, when injected into the blood, turns on a gene that codes for the healthy version of hemoglobin. Not so clear, however, is how to get this apparent lifesaver to those who need it.

To drug firms, the U.S. market for the drug is too small to bear the expense of making butyrate pure enough to be injected. Oakland-based researcher Perrine has a permit to manufacture butyrate, but she says the demand for the drug far exceeds her capacity to make it. That leaves the Pharmaceutical Manufacturers Association (PMA). Thomas Copmann, PMA's assistant vice president for biotechnology and biologics, expressed surprise when *Science* told him that butyrate was in short supply. But he added that Perrine should submit a proposal to PMA's Commission on Drugs for Rare Diseases, which tries to match drug firms with orphan-drug candidates. Perrine says she's interested.

First Signs of Alzheimer's?



ITO *ET AL.*

Early warning. Dopamine depleted in Alzheimer's brains *(top)*.

A research team from Tohoku University in Sendai, Japan, thinks they can spot molecular clues to Alzheimer's disease before friends and relatives notice symptoms in a loved one. By adding a battery of radioactive tracers to the brains of Alzheimer's patients and scanning the brains with positron emission tomography (PET), the investigators say they can detect telltale changes in the production of the neurotransmitter dopamine and in the density of its receptors. These clues, they hope, will not only permit early diagnosis of the disease but also distinguish Alzheimer's from other causes of dementia, such as vascular disease.

The researchers introduced tracer molecules to the brains of 30 patients highlighting the neurotransmitters and receptors along a brain pathway called the nigro-striatal neuronal circuit—an area known to be impaired in Alzheimer's. The results so far show that the neurotransmitter dopamine follows a roller-coaster course as the disease progresses. Its synthesis rises in the early stages, perhaps because of other neurotransmitter disturbances, then falls as symptoms worsen. Meanwhile, the density of dopamine receptors rises—perhaps a sign that the brain is trying to compensate for the loss of the transmitter.

Not everyone is convinced: Henry Wagner of the Johns Hopkins University School of Hygiene and Public Health, an expert on neurotransmitters, says he isn't sure that the dopamine loss can be considered a cause of the disease. Other researchers have linked Alzheimer's to changes in another neurotransmitter, acetylcholine. But the Tohoku researchers—Masatoshi Ito and Tatsuo Ido of the Cyclotron Radioisotope Center and Hidetada Sasaki and Kenichi Meguro of the Department of Geriatric Medicine of Tohoku University—argue that the enhanced neurotransmitter synthesis in the earlier stage is a specific marker for Alzheimer's. In fact, they're so convinced by this preliminary work that they have already started a clinic for early diagnosis.

Math Societies Cancel Denver Meeting

The American Mathematical Society (AMS) and the Mathematical Association of America (MAA) have canceled plans to hold their 1995 annual joint meeting in Denver, Colorado, in response to Colorado's passage last year of an anti-gay rights amendment. The decision was reached by governing bodies of the two societies at this year's joint meeting in San Antonio, Texas, with final approval coming at the end of January. The societies have not yet settled on an alternative site for the 1995 meeting, which would ordinarily draw approximately 2000 participants.

The cost of breaking agreements with hotels and the Denver Convention Bureau is not yet known, but not pulling out could have been equally costly since members might simply have boycotted a Denver meeting, notes MAA executive director Marcia Sward. That's what some expect to happen when the American Chemical Society carries out plans to meet in Denver in March. "In either case we would expect to lose money," says Sward, adding, "this was not basically a financial issue, it was a human rights issue."