New Horse May Lead Interferon Race

A new horse has taken the public lead in the race to develop a method of manufacturing human interferon by genetic engineering.

The new horse is a partnership between the gene splicing company Genentech and the drug house of Hoffmann-La Roche. Genentech scientists announced on 4 June that they have produced both the leucocyte and fibroblast varieties of human interferon by recombinant DNA methods, and that enough material will be available for clinical trials as early as 1981.

The announcement would seem to put the Genentech/Roche team ahead of the Swiss-based company of Biogen, and its backer Schering-Plough. Biogen announced the cloning of leucocyte interferon in January, making itself the apparent leader in a hotly contested field. Hints from Roche that it had done the same were not widely noticed at the time.

Genentech reports that its yields of interferon are as high as 100,000 molecules per bacterial cell, considerably higher than that reported by Biogen in January. The bacteria-made interferon does not contain the sugar residues found in natural human interferon but nonetheless is biologically active in protecting against virus infection. It seems possible that the sugar units "are not essential for biological activity," Genentech scientists told an FDA committee.

According to Genentech, the difference between their interferons and those made by Biogen is that "our products . . . are expressed directly as the complete active proteins, whereas the earlier announcement referred to production of a precursor interferon molecule."

Eli Lilly, Du Pont, and Pfizer are among the dark horses in the interferon cloning race; their positions are presumably but not necessarily behind Genentech's.

Meanwhile other companies, such as Flow General and Abbott Laboratories, are setting up to produce interferon by tissue culture methods, while Upjohn, in what could prove a neat shortcut, is studying a group of drugs which stimulate the body to produce interferon.

All this activity is a tribute to the imagination and resourcefulness of the drug industry. It remains to be seen, however, what, if any, role interferon has to play in human therapy.

Rumor has it that Genentech, a private company, is planning to go public.

Pope Issues Warning to Scientists

The social responsibility of scientists was a principal theme of the address given on 2 June by Pope John Paul II during his visit to Unesco in Paris. Though his words were somewhat elliptic, his feeling was clear.

We must be concerned about the misuse of science, the Pope explained, about "all that proposes or presupposes these non-scientific aims, requiring scientists to place themselves at their service without allowing them to judge or decide, in complete independence of spirit on the human honesty and ethics of such goals, or threatening scientists with bearing the consequences when they refuse to contribute to them. Do these unscientific goals of which I speak, this problem I propose, need proof or comment? You know what I am referring to. Suffice it to say that among those cited in international tribunals at the close of the last world war, there were men of science."

John Paul dragged up the future as well. "We are well aware, ladies and gentlemen, that the future of man and mankind is threatened, radically threatened, despite very noble intentions, by men of science. And it is menaced because the tremendous results of their research and their discoveries, especially regarding natural science, have been and continue to be exploited—to the prejudice of ethical imperatives—for ends which have nothing to do with the prerequisites of science, but with the ends of destruction and death. . . . This can be verified as well in the realm of genetic manipulations and biological experiments as well as in those of chemical, bacteriological, or nuclear armaments."

The Pope offered no further clarification of just what in the "realm of genetic manipulations and biological experiments" he was objecting to.

Fierce Bees Get Fat and Happy

It read like the script for some horror movie, *The Killer Bees*. Scientist brings African bees to Brazil, lets them escape. Bees roam about in aggressive swarms that will kill as soon as look at you. Bees start moving north at steady pace, massing for invasion of Mexico and United States. National Academy of Sciences convenes expert panel which recommends that "every effort should be made to prevent the Brazilian bee from reaching North America." Experts find that the farther north the bee moves, the more aggressive it becomes. They devise a plan of action to meet the crisis. A stand must be made in Central America (country not specified). A strain of barrier bees must be

developed which will do combat with the Brazilian bees and protect the United States from invasion.

This of course was no movie script but a true bee story from 1972. What happened to the bee invasion? Did the academy's bee barrier beat back the barbarian buzzers? Alas, it was never erected. But the threatened swarms never arrived. According to Anthony Raw, a bee specialist at the University of Brazilia, the bees that have now spread through most of South America are not the same as the African bees that originally escaped. By interbreeding with native bees, they have become milder and less nasty than their ancestors. "I don't think anybody should be calling them killer bees," Raw told the Associated Press last month.

The African bees were brought to Rio Claro in Brazil in 1956 for breeding experiments. The outbreak occurred the following year when a visiting beekeeper, misunderstanding the containment system, removed the double queen excluders: 26 swarms headed by African queens fled the hive. The government released thousands of Italian queens to redeem the situation, but without success.

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