MRC Denies Blocking Access to Genome Data

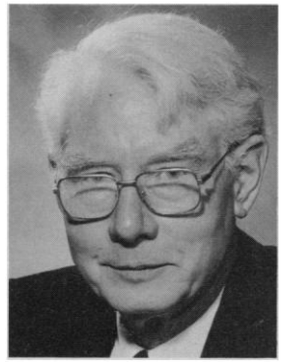
UK genome officials have been accused—falsely, some say—of guarding information for commercial reasons

FOR THE PAST 2 MONTHS THE NATIONAL Institutes of Health (NIH) has taken heat for its attempt to patent hundreds of gene fragments identified as part of the Human Genome Project. Now the Medical Research Council (MRC) in Great Britain has landed in the soup over its policy for handling access to sequence data for the same type of gene fragments. The MRC has been criticized (though not by name) by the head of the National Institutes of Health, assailed by the prospective next director of the Human Genome Organization (HUGO), and accused, in an article in the 14 November *Nature*, of keeping genome data in "closely guarded storage" until the council can "sell" them to industry.

Tony Vickers, head of the MRC Human Genome Mapping Resource Center, emphatically denies all charges and denounces the *Nature* article as inaccurate. And two prominent genome officials, both outspoken foes of the NIH patenting scheme, seem to agree that the MRC is getting a bum rap, even though parts of its plan for handling genome data may be flawed. James Watson, head of the NIH genome effort, says that when Vickers explained the MRC plan to him, "I took it at face value. It did not seem like part of a secret plot to me." Adds Walter Bodmer, director of the Imperial Cancer Research Fund and president of HUGO: "Unless there is [something] that I don't know about, I don't believe the MRC policy is to be restrictive."

Vickers suspects that at least part of the criticism stems from a desire to deflect attention from the controversy at NIH. Indeed, besieged NIH officials seem to be relishing the MRC flap. NIH director Bernadine Healy denounced the British plan, without mentioning any country by name, at an NIH meeting last month on her agency's hotly contested patenting scheme. Meeting organizers passed out hundreds of copies of the *Nature* article blasting the MRC. And perhaps the MRC's most vocal critic is Craig Venter, the NIH molecular biologist who filed the first patent on 350 gene fragments.

But lost among all the accusations of who did what to whom is the fact that both NIH and the MRC are grappling with the same thorny question, one certain to arise again: namely, how to protect national interests and reap the economic benefits of the Genome Project while ensuring open exchange of scientific information. The specific issue here is what both NIH and the MRC plan to do with the data emerging from their efforts to find all the active genes in the human genome, which are estimated to number 100,000. So far, each agency has identified about 2000 of these complementary DNA (cDNA) clones and has sequenced a few hundred bases of each. Although the functions of the genes and their chromosomal locations are not yet known, NIH decided to seek patents on these fragments at the same time they are deposited into Genbank, the public database run out of Los Alamos National Laboratory. This raised howls of protest from scientists, who argue that the scheme will discourage technology transfer and inhibit scientific exchange (*Science*, 11 Oct. p. 184).



Under fire. *Tony Vickers.*

By contrast, the MRC was advised that the gene fragments are probably not patentable, says Vickers. Instead, the MRC intends to make them available through a "working" database at the resource center. The database was originally scheduled to be available in late November, but plans are now on hold pending resolution of the U.S. patent situation. If NIH persists in patenting, Vickers warns, the MRC may be forced to follow suit, delaying publication of the sequences. As now envisioned, the MRC's cDNA data would be freely available to any "bona fide" academic researcher, but industry users would be charged a "subscription fee" of about $8,500 for the first user in a company and $1,700 for each additional user.

It's the industry subscription fee that led to accusations that the MRC is attempting to sell Genome Project data for profit. Vickers insists that the MRC simply wants to defray some of the cost of its cDNA project and likens the MRC's situation to the American Type Culture Collection, which charges for the cultures it distributes. He adds that the fee is not just for access to the database but to all the facilities at the center, including collections of large clones and PCR primers. Companies are not "buying" the data, he contends, in that they take nothing away. "There is no exclusivity. Any sequence of interest to a company would remain in the database for anyone else, commercial or otherwise, to see."

To dispel any lingering doubts about secrecy, Vickers spelled all this out in a policy statement, which he sent to genome officials at NIH and elsewhere in mid-November. But much to his dismay, his explanation raised entirely new questions, especially with Norton Zinder, the former chair of Watson's advisory committee at NIH who is expected to become the next director of HUGO. Zinder is incensed that the MRC does not intend to allow users to "browse" the database—in other words, they will not be able to scan through the sequences or download them, as they can from Genbank, and analyze the data with their own software. Rather, users must ask a specific question to obtain access, such as, do you have any sequences similar to detoxification genes or any cDNAs that reside on a particular region of a chromosome?

"That means it is a closed database," snaps Zinder, who accuses the MRC of "playing fast and loose" under the guise of openness. "Patents are bad and I don't like them," he says, referring to the NIH plan, but at least they [the sequences] are released." "I honestly don't know why people would want to browse," responds Vickers with obvious exasperation. He insists their approach is an improvement, as the MRC has built in analytic software that would not be readily available to small labs.

What all these charges and countercharges underscore, says Vickers, is the need for international standards for exchanging Genome Project data. He notes that it was inevitable that an issue like this would arise. "It is important to get the rules of data exchange in place before you start, otherwise accusations of bad faith are thrown around." He, for one, is more than willing to negotiate and stresses that the MRC plan is "open to change."

People on both sides of the debate agree that this transatlantic tiff will force the genome community to come up with international standards for exchanging Genome Project data while it is still fairly early in the game. "You generally don't do anything until there is a crisis," concedes Watson. "I'm glad this is happening now, before things get too set," adds Zinder, who doesn't like either the NIH or MRC stance. "We can still blow both sides out of the water." ■ LESLIE ROBERTS