Drug Firm and UC Settle Interferon Suit

Commercial incentives seem to be changing the ground rules for scientific cooperation in biology

Hoffmann–La Roche and the University of California (UC) have reached an out-of-court settlement in their lawsuits over an interferon-producing cell line known as KG-1. Thus the pharmaceutical giant and the university have spared themselves the embarrassment of a public trial over the ownership of the cell line which was developed by researchers at UC and exploited as an interferon source by Roche and the biotechnology firm of Genentech. Roche has paid the university an undisclosed sum to bring the matter to a close.

The episode, which began with the filing of legal charges and countercharges more than 2 years ago, is one of the first public disputes of this magnitude to derive from a traditional sharing of scientific material for research purposes (*Science*, 26 September 1980, pp. 1492–1494). Problems arose when it appeared that Roche and Genentech stood to profit whereas the UC researchers and the university would receive no benefit. The legal tangle is a graphic illustration of the way that commercial incentives are changing the ground rules for scientific cooperation in basic biology.

Phillip Koeffler and David Golde of the University of California at Los Angeles took an important step forward in cancer research when they succeeded in getting cells from a patient dying of acute myelogenous leukemia to reproduce in the laboratory. They reported the development of the KG-1 cell line in *Science* (9 June 1978, p. 1153) and subsequently sent it to other cancer researchers. Among them was Robert C. Gallo of the National Cancer Institute (NCI) who observed that KG-1 produced modest quantities of interferon. Neither Gallo nor Golde was directly engaged in interferon research but a former NCI colleague of Gallo's was. Believing he had Golde's permission to share the cell line, Gallo sent it to Sidney Pestka at the Roche Institute of Molecular Biology. Although generally regarded as a scientifically independent institute, its ties to Hoffmann–La Roche soon became clear.

After months of work, Pestka succeeded in turning KG-1 into an abundant producer of human leukocyte interferon. Thus equipped with a generous supply of the material, scientists working for Roche were able to extract enough genetic information so that the interferon gene could be cloned. The latter step was accomplished by researchers at Genentech under contract to Roche. Subsequently, Roche was able to manufacture interferon for clinical trials in cancer patients. What is known as Recombinant Leukocyte A interferon entered tests at Stanford University and the M. D. Anderson Hospital and Tumor Institute in January 1981 and, according to a Roche spokesman, is now in trials at a host of institutions throughout the country.

Golde, who vehemently denies that he ever gave Gallo permission to send KG-1 to Pestka, was dismayed to discover that Hoffmann–La Roche was using his cells to clone a human interferon gene for commercial pharmaceutical purposes. Golde took the position that the company had misappropriated property—the cell line—which belonged to the University of California. UC attorneys agreed and prepared a suit against Roche and Genentech. Roche went to court asking the judge to rule that it had no obligation to UC or its researchers. The company argued first that it had obtained the cell line through the usual course of scientific exchange and without any restrictions as to its use. Further, it stated:

> In the fall of 1979, Roche initiated recombinant DNA experiments using genetic information derived from KG-1 cells for the purpose of creating a new and different organism which would produce human leukocyte interferon in greater quantities and with greater efficiency and lower cost than was possible through other available processes. The organisms produced by Roche through this process contained no physical portion of the KG-1 cell. Moreover, the decision to use genetic information extracted from the KG-1 cell line rather than some other cell line capable of producing leukocyte interferon was not critical to the process. Had Roche known then or believed that defendants claimed any restriction on the use of the KG-1 cell line by Roche, Roche would have elected to use another cell line

The claims and counterclaims in this dispute did not end with filings about the right to use KG-1. In addition, Roche sued Golde for defamation, asserting in court papers that "David Golde has, orally and in writing, made false statements which have injured [Roche] in its business and reputation. . . ." Golde, Roche claimed, said that the company had " 'stolen' " or " 'hijacked' " the cell line and that Roche employees were " 'crooks' " and " 'thieves'."

"I was sued for slander because it was financially expedient for Hoffmann–La Roche to do so," Golde said in a recent telephone interview with *Science*. He called the whole episode a very "bitter" experience but one which, in the end, was worth it. "My opinion is that [in the settlement] the university's property right has been recognized," Golde says.

Under court order, parties are not permitted to disclose the amount of money that Roche paid the university in the settlement that brings all the claims and counterclaims to an end. It is agreed that the human interferon gene is Roche's and that the company may continue to use KG-1 cells. However, as a Roche spokesman points out, now that they have the cloned gene the cell line itself is no longer important.

Asked whether as a result of this dispute Roche Institute researchers had been given any cautionary instructions about the handling of material acquired through scientific exchange, the company spokesman said he knew of none. People at the Roche Institute "know better than anyone else about university traditions," he said.

All parties to this affair say they are relieved that it was settled without a public trial and say they now want to get back to collaboration as usual. "The people at the Roche Institute have many collaborations with people at the University of California," the company's spokesman reports. Hard feelings between Golde and Gallo have softened; the two recently co-authored a paper on a new subtype of a human leukemia virus (*Science*, 5 November, pp. 571–573). And Genentech, which went public in 1980 shortly after the announcement that the interferon gene had been cloned, issued a press release assuring its present and potential stockholders that "The terms of the settlement will have no financial impact . . ." on the firm because it was indemnified by Roche.

So everyone claims to be happy. And, perhaps, an expensive lesson has been learned. It isn't wise to "share" scientific material these days unless the terms of the exchange are clearly set forth, preferably in writing.

—**Barbara J. Culliton**