Disputed paper takes centre stage in Congress

■ Forensic data raise questions

■ Baltimore has day in court

Washington

LAST Thursday, 4 May, was a day many in the scientific community feared would have a chilling effect on research in the United States. But that was not the outcome.

Chairman John Dingell (Democrat, Michigan) and his colleagues and staff on the energy and commerce subcommittee on oversight and investigations spent nearly eight hours grilling witnesses about possible fraud or misconduct in the preparation of a paper that appeared in *Cell* in 1986.

At the end of the long day, Dingell proclaimed that he was "not satisfied with the answers we have been given" and promised that his subcommittee would continue to probe the matter. But the larger concern, that the investigation would lead to the formation of a 'fraud squad' to police scientific research, did not seem a likely outcome of the day's events.

The hearing had the ingredients of high drama. Waiting outside before it began was a body of illustrious scientists who had travelled to Washington from all over the United States to offer support for the *Cell* paper's authors, particularly for Nobel laureate David Baltimore, the paper's most famous author.

Inside, Secret Service forensics experts were standing by with giant displays showing retouched photographs and laboratory notebook pages out of chronological order. And finally there was the long-awaited meeting between Dingell and Baltimore, two men of great stature even in the exalted circles in which they walk.

Questions about the *Cell* paper (45, 247; 1986) were first raised in 1986 by Margot O'Toole, then a postdoctoral fellow in the laboratory of Thereza Imanishi-Kari, the paper's principal author. The paper deals with the expression of endogenous immunoglobulin genes in transgenic mice.

O'Toole's concerns were eventually taken up by Ned Feder and Walter Stewart, two National Institutes of Health (NIH) researchers known for their persistent investigations into misconduct in research. Baltimore declined Feder and Stewart's request for access to the data relating to the paper, and instead requested that NIH conduct their own inquiry. Ultimately NIH formed an investigatory panel chaired by Joseph Davie of Searle Research and Development.

But Feder and Stewart's case was taken up by Dingell's subcommittee, which in

April 1988 held hearings where O'Toole's charges were given a public airing. At the time, the subcommittee was criticized for holding a hearing without inviting testimony from the paper's authors, and since then there has been growing anticipation that eventually Baltimore would get "his day in court". He got it last week.

The hearing began with a long cross-examination of Davie and the other two members of the NIH panel — Hugh McDavitt of Stanford University and Ursula Storb of the University of Chicago — together with NIH director James Wyngaarden. Concern focused on whether the points raised in the panel's final report released in January this year constituted 'misconduct' or 'serious error'.

The panel had criticized the *Cell* paper's authors for overstating the specificity of the Bet-1 reagent used to distinguish between endogenous genes and the transgene, some errors that appear in two of the paper's tables and some inaccuracies in the text. But the panel did not find evidence of "fraud, misconduct, manipulation of data, or serious conceptual errors". After prolonged questioning, Davie admitted that some of the errors could be considered misconduct if the authors could be shown to have had an intent to deceive.

A letter of correction appeared in *Cell* last year (55, 541; 1988), and a second letter requested by the NIH panel is expected to appear shortly.

The NIH announced two weeks ago that they were reopening their investigation of the *Cell* paper (see *Nature* 339, 3; 4 May 1989). Wyngaarden explained that new allegations had been received from O'Toole that raised questions about the data used to prepare the paper prompting the case to be reopened. In particular, there was concern that data for one of the serial dilutions in figure 1 did not exist.

Then came the Secret Service testimony. The subcommittee last August asked the Secret Service to review the original data documents that were used to prepare the *Cell* paper. The seven-month investigation revealed that notebook pages that bore dates in 1984 were more probably prepared in 1986. The Secret Service also showed that an autoradiogram in figure 4 was a composite of more than one negative, and that the exposures had been adjusted so that some bands that appeared in the original negatives were not visible in the published figure.

So the stage was set for Baltimore's

appearance. In his opening statement, Baltimore blasted Feder and Stewart for their "vitriolic" campaign against him, and accused the subcommittee of "joining them in this relentless campaign". He called "a partial oral summary" of the Secret Service results presented to the paper's authors the previous week "a charade of helpfulness", and accused the committee of blindsiding the witnesses with new information on the day of the hearing. He further argued that the main contentions of the paper were correct, and that the work had been corroborated and extended in other laboratories.

A key point in the subsequent questioning focused on a letter from Baltimore to Herman Eisen at Tufts on 9 September 1986, in which he wrote that "The evidence that the Bet-1 antibody doesn't do as described in the paper is clear. Thereza's [Imanishi-Kari] statement that she knew it all the time is a remarkable admission of guilt."

At the hearing, Baltimore explained that the letter was written on the basis of a mistaken impression of a conversation between Eisen and Imanishi-Kari. The confusion was cleared up a few days later and he thought no more of the event.

For her part, Imanishi-Kari explained that the forensic evidence proved nothing more than the fact that she was not a "neat" person, and that the dates in the notebooks were occasionally out of sequence because of the way she kept her records. She further pointed out that her work was aimed at finding a cure for lupus, and that as someone who suffered from the disease herself and had a sister who died from it, it would be unthinkable for her to make up data that would in any way mislead scientists working in the field. Baltimore added that the sum of the Secret Service data showed merely that different scientists do things differently.

As for the autoradiogram in figure 4, Baltimore and David Weaver, the paper's first author, insisted that the contrast had to be adjusted so that more relevant data would not be obscured.

In the end, Dingell castigated Baltimore and his colleague for failing to be more forthright in their answers to the subcommittee's questions, but before he could bring down his gavel to close the hearing, Baltimore insisted on a final statement in which he expressed his outrage at the way he had been hounded by the subcommittee and its staff.

Despite the confrontation between Baltimore and Dingell, both congressmen and staff struck a more conciliatory tone. They insisted that their concern was more for the process of conducting investigations into allegations of misconduct, and that they were anxious to see research institutions and NIH do a better job, which NIH had shown they could do if prodded.

Joseph Palca