

# New evidence emerges in Tufts misconduct case

- Grant application yields check
- Secret Service called in again

## Washington

INVESTIGATORS at the National Institutes of Health (NIH) have found evidence of data fabrication and falsification in the misconduct case of Tufts University immunologist Thereza Imanishi-Kari, according to sources briefed by the NIH Office of Scientific Integrity (OSI).

Although a final report on the case is still expected to be weeks if not months away, the news is the first hint of an outcome in what has become one of the longest-lasting and most divisive misconduct cases in US science. In more than three years of investigation and review, the case has drawn unprecedented attention and debate, in large part because the involvement of Nobel laureate David Baltimore, president of Rockefeller University.

The disputed work was done with Baltimore's collaboration, when he was at the Massachusetts Institute of Technology (MIT), and he was a co-author of the 1987 *Cell* paper in which the data appeared.

According to the sources, OSI investigators, using statistical analysis, forensic evidence and consultation with other scientists, have determined that all three tables in the *Cell* paper contain fabricated or falsified data. OSI has found that six of the paper's seven figures are also in some way suspect, sources say. OSI officials, through a spokesman, declined to be interviewed.

Following a still-unscheduled final review by Imanishi-Kari and her lawyer Bruce Singal, OSI will finish its report on the case. The draft will be reviewed by the NIH director and other principals in the case, then released. Should the report's conclusions be in line with the latest evidence, the US attorney's office in Baltimore, Maryland, which has been conducting a parallel investigation, is expected to press for an criminal indictment.

In that case, charges would be expected to fall within the legal definition of US Code 1001, which includes lying to a federal agency. Other charges could include mail fraud (if fabricated data was mailed to NIH), obstruction of justice and perjury. The last charge would be based on Imanishi-Kari's congressional testimony concerning the challenged paper. In four hearings, the last held this May, Representative John Dingell (Democrat, Michigan), chairman of the oversight and investigations subcommittee of the House of Representatives Energy and Commerce

Committee, has attempted to get to the bottom of the case.

Subcommittee staff conducted their own investigation, enlisting the Secret Service to analyse forensically data tapes and notebooks from Imanishi-Kari's laboratory. They concluded this year that much of the data was "not authentic", and that deliberate fabrication appeared to be in evidence.

Since Dingell's last hearing, OSI has commissioned the Secret Service to carry out further forensic analysis of the data tapes. That work is said to have gone beyond the analysis commissioned by the Dingell staff, and has found that not only were the tapes not created on their purported dates, but that some were actually produced before the experiments described in the notebooks were conducted.

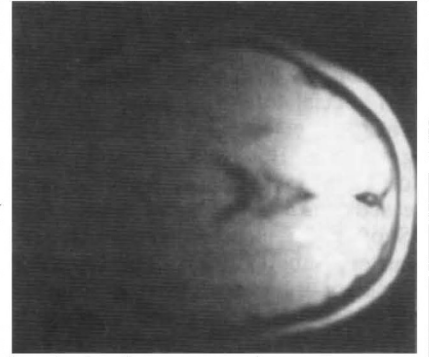
Another unexpected development in the investigation was the discovery of a grant application by Imanishi-Kari containing original data from some of the cell lines described in the disputed notebooks. Sources say the independent data provide a piece of the jigsaw puzzle that confirms evidence supplied in 1987 by whistle-blower Margot O'Toole, who had served as a postdoc in Imanishi-Kari's laboratory.

The grant application of 1 February 1985 includes a list of 150 antibody-producing hybridomas. Each was given a unique five-character code name, some 130 of which also correspond to cell lines in notebook data supplied to Congress and NIH by Imanishi-Kari as evidence supporting her paper. Because the application postdates the experiments of questioned authenticity and was found in NIH files, rather than being provided by Imanishi-Kari after the dispute occurred, the data have supplied the first independent check of the experimental techniques used in the preparation of the *Cell* paper and are said to have verified key elements of O'Toole's assertions.

Once OSI issues its report on Imanishi-Kari, it is expected to turn to the second and even more controversial aspect of the case — the 'who-knew-what-when' investigation, according to sources.

Imanishi-Kari says that she and her lawyer have been trying to schedule a meeting with OSI for months, but they have been repeatedly delayed. "My impression is that they are not too eager to see me." In the meantime, she says, "the worst of this is the agony of waiting for

## High- $T_c$ brain scan



THIS is the first image of a human brain produced by a low-field magnetic resonance imaging (MRI) scanner using a high-temperature superconductor pickup coil, rather than the conventional copper. The yttrium-barium-copper oxide coils were developed by ICI Advanced Materials, and fitted to a scanner at Hammersmith Hospital, London, by researchers from GEC.

In the scanner's 0.15-tesla magnetic field, and at liquid-nitrogen temperature (77 K), the superconductor coil has significantly greater sensitivity than copper. This gives a higher signal-to-noise ratio, which may decrease the need for repeated scans and so reduce costs. Alasdair Hall from GEC, whose brain is pictured, says superconducting ceramic coils were the logical next step after experiments to improve the sensitivity of copper coils by cooling in liquid nitrogen.

The present generation of high-temperature superconducting ceramics is so far limited to applications where their low current carrying capacity is not a problem, such as the MRI coils and sensitive aerials for military communications equipment.

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■ A 'record'  $T_c$  claim, page 321.

them to decide. When I look at this in retrospect, maybe it would have been better if it had gone straight to [the] Justice [Department]. There you have due process and rights."

Although many of the allegation of research misconduct in Imanishi-Kari's MIT laboratory arose in 1986 and 1987, internal investigations and reviews at MIT and later at Tufts consistently found no reason to retract the paper, acknowledge fabrication, or even admit gross error, with the exception of two short corrections providing some additional data (one of which is now also suspect) later published in *Cell*.

"If OSI reaches the conclusion that there was misconduct on my part, then you have to conclude that MIT covered up and Tufts covered up," says Imanishi-Kari.

Results from the second part of the investigation are not expected before the end of the year.

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