Oncogene discovery

Priority by press release

CANCER JAB ON THE WAY. This was the most extreme headline to emerge from the blaze of publicity preceding the simultaneous publication in *Nature* (7 July, p.35) and *Science* (15 July, p.275) last week of independent discoveries of the link between the oncogene of a tumour virus of monkeys and the human gene for a growth-promoting substance produced by blood platelets. Since reasonably accurate and sensible stories in the American press came first, the chauvinism and slavish devotion to an imperfect press release that characterized the British news stories are mainly a reflection of how newspapers operate.

The circumstances were these. Early in May, Dr Michael Waterfield of the Imperial Cancer Research Fund (ICRF) laboratories in London asked Dr Russell Doolittle of the University of California at San Diego for his computerized data base of protein structures. Doolittle willingly sent a tape as it is his policy to make his data base available to any academic scientist.

Waterfield wanted the data base to compare its protein structures with the partial structure of platelet-derived growth factor (PDGF) about to emerge from his laboratory's collaboration with Dr Thomas Deuel's group at Washington University School of Medicine, St Louis, and Dr Bengt Westermark's team at the University of Uppsala in Sweden.

To assist in the search, Waterfield had also asked W.J. Wilbur and David Lipman of the National Institutes of Health (NIH) in Bethesda, Maryland, for their rapid search programs; they also provided, unasked, a data base in their own hands. It was from that data base on 10 May that Waterfield received the astonishing news of the close identity between PDGF and the protein encoded by the simian sarcoma virus cancer gene, the structure of which had been established in Dr Stuart Aaronson's laboratory at NIH. (For those who like coincidences, Wilbur and Lipman's paper was directly followed by Aaronson's in the February issue of *Proceedings of the US National Academy of Sciences U.S.A.*) A search of the Doolittle data base immediately confirmed the discovery.

Seeking biological evidence in support of the sequence data, Waterfield and his collaborators revealed their discovery to a few close colleagues but not to the suppliers of the data bases nor to those from whom they started to request biological materials — to the subsequent annoyance of many. Plans changed, however, with the publication in the 27 May issue of *Science* of a partial structure of PDGF by Michael Hunkapillar of the California Institute of Technology and Harry Antoniades of the Harvard School of Public Health. (To confuse matters, *Science* is published a week ahead of its cover date.)

To the relief of the Waterfield team,

Hunkapillar and Antoniades had not spotted the relationship between PDGF and the cancer gene, stating that "a limited search . . . has not revealed any significant homology . . .". Realizing, however, that it could not be long before somebody spotted the relationship from the published data, Waterfield telephoned *Nature* in the middle of the week of 22 May to ask if his paper could be published quickly, once he had produced a final draft after returning from a holiday on Rhodes.

Events then moved quickly. On 28 May, Russell Doolittle read the Hunkapillar and Antoniades paper, fed their PDGF struc-

ture into his data base and reached the same result as Waterfield. He then alerted Hunkapillar and Aaronson and word spread from the former to his colleague Leroy Hood, who made it public during a meeting of the American Society of Biochemistry in San Francisco in the week of 5 June. As it happens, Waterfield's collaborator, Deuel, was at Hood's talk, and Waterfield's worship of Helios on Rhodes was soon interrupted by the news; the paper by Waterfield *et al.* was submitted to *Nature* on 14 June, a couple of days before Waterfield's return to ICRF. Meanwhile, Doolittle *et al.* had already sent their paper to *Science* on 3 June.

News of the discovery first reached a wider public through the 18 June issue of *Science News*, a reporter from which had heard Hood's talk. By the end of June, the story had spread through the *Los Angeles Times* to the *Washington Post* and the *New York Times*. Although some of the writers had picked up rumour of Waterfield's work, it was Doolittle's that gained prominence. By 1 July, the story was in the *International Herald Tribune* and the Imperial Cancer Research Fund feared it would gain no credit for Waterfield's prior discovery. With *Nature*'s approval, the fund issued a press release on that day, a week before publication.

The press release was not cautious. It did not mention the fact that the only strong link of the discovery to cancer was in the case of tumours of monkeys caused by simian sarcoma virus. It claimed categorically that PDGF "produced by the oncogene in excessive amounts . . . leads to uncontrolled growth in . . . bones and other connective tissue" and that drugs can now be devised to block the effects of PDGF and "perhaps stop the cancerous growth".

Not surprisingly, the story was in every television news bulletin that night and prominently dealt with in every British newspaper the next morning. Almost without exception, the reports closely followed the press release. None made clear the viral context of the discovery or the degree of extrapolation from that to human tumours. Only one mentioned Doolittle *et al.* And all told of possible drugs, mostly with due regard for the speculative nature of that possibility.

Not so the *News of the World*, a Sunday paper that likes to titillate prurient interests of its readers from a platform of moral indignation. "A superjab that will cure certain types of cancer will be available in Britain within a year", it began, quoting Waterfield as saying "I would honestly hope that within the year . . . we will find a drug to halt some kinds of cancer". Asked last week if that was an accurate quotation, Waterfield said he could not be certain exactly what he did say in response to the leading questions of a persistent reporter — one who had begun by asking if he was in cancer research because a relative was suffering from the disease. **Peter Newmark**

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REASONS

From last week's *News of the World*.