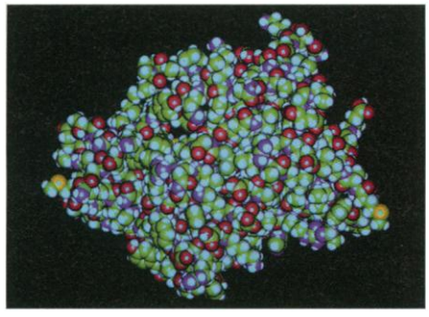
**Co-authors of a 1979 Genentech paper published in *Nature* and a representative of Genentech defend the correctness of that paper in the light of testimony by Peter Seeburg, another co-author of the paper, at a San Francisco trial over a patent dispute: "[W]e, along with Genentech, categorically deny [Seeburg's] accusation that the data submitted in the *Nature* paper were false." Seeburg also comments. And the question of whether social interactions among the Middle Paleolithic hunter-gatherer populations in the Mediterranean Basin were well developed, like those of historic and contemporary hunter-gatherer societies, is explored.**

## UC-Genentech Trial

As reported recently in *Science* (E. Marshall, "Startling revelations in UC-Genentech battle," News of the Week, 7 May, p. 883), a trial is currently taking place in San Francisco, California, involving a patent dispute between Genentech, Inc. and the University of California, San Francisco (UCSF). During this trial, Peter Seeburg of the Max Planck Institute for Medical Research in Heidelberg, Germany, testified that data presented in a 1979 paper published in *Nature* (*1*), of which he was a co-author, were false, and that he knew they were false when the paper was submitted for publication.



**Human growth hormone**

CREDIT: LEONARD LESSIN/FBPA

As the other co-authors, we, along with Genentech, categorically deny his accusation that the data submitted in the *Nature* paper were false. We also emphatically disagree with Seeburg's implication in his testimony that it was permissible to make up data in the *Nature* paper on the basis of "similar work" because "it's all the same game," and that publishing a description of a nonexistent plasmid is merely a "technical inaccuracy." We believe that to do this would be both intellectually dishonest and antithetical to the fundamental principles on which scientific inquiry rests.

We would like to remind readers that the trial in San Francisco is about patent infringement. The verdict in the trial, and the probable appeals, will speak to that issue, not the accuracy of the scientific literature. Nevertheless, we feel that these accusations have impugned our reputation and cast doubts upon our scientific integrity.

Genentech retains the notebooks (www.gene.com/notebooks/) upon which the 1979 *Nature* paper was based. In our view, these notebooks provide documentation that this work was indeed performed as described in the paper. We have invited the editors of *Nature* to examine all of these materials and speak with the co-authors, to satisfy themselves as to the accuracy of the 1979 paper. We would welcome such an opportunity to resolve these issues.

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**References**

1. D. V. Goeddel *et al.*, *Nature* **281**, 544 (1979).

Marshall's article presents an incomplete picture of my trial testimony in a patent infringement case concerning events that occurred 20 years ago. I take issue with four quotations from his article.

1) "secretly removed a bacterial clone...."

The reader may be left with the impression that I stole a clone from UC. The fact is that I took aliquots of my own research materials, which I (funded at the time by a German fellowship) and my colleague John Shine had developed and which, by most scientists' ethical standards, I felt entitled to. Shine, who had taken the same clones with him to his new position at the Australian National University, shared my belief. That I came on New Year's Eve was not to steal, but to avoid any unnecessary unpleasantries with my former lab head, whose lack of support had forced me to work at night on the growth hormone project, and with whom my relationship had deteriorated, as documented in the 1987 publication *Invisible Frontiers: The Race to Synthesize a Human Gene* (Tempus Books of Microsoft Press) by Stephen S. Hall. The dispute over the incident was subsequently resolved by an agreement between Genentech and UC.

2) "To speed up the process...he decided...."

The decision was made by me and a colleague at Genentech.

3) "upheld the Genentech line on HGH until recently..." and "'walking a tightrope' between truth and falsehood."

This is wrong. I had told numerous friends in the scientific community, including Shine, about the use of UC's DNA more than 10 years ago. As can be seen from my depositions as early as 1992, and as I explained in my trial testimony, I had in fact been consistent over time in stating that UC's DNA was used in the construction of Genentech's expression vector. Prior statements to that effect were cloaked in scientifically precise diction. For instance, "not the same physical entity" was used because the UC clone was regrown at Genentech, and hence the original molecules had been replaced by new ones. In this manner, I managed to walk a tightrope between the truth and loyalty to Genentech and a former colleague, and not, as wrongly stated by Marshall, between truth and falsehood.

4) "he has published false 'technical' data...."

I published a *Nature* article with my colleagues at Genentech in which we described the first production of a human growth hormone (HGH) preparation free of neurodegenerative agents; 100,000 children worldwide are safely treated with this hormone therapeutic. It is important to stress that the scientific results and conclusions of this landmark publication are unambiguous and correct. The single technical inaccuracy in the paper concerns plasmid pHGH31, an intermediate for the final expression vector, which itself is exactly as described. Not pHGH31, but a functionally equivalent plasmid previously constructed by Shine and me at UCSF, was used as the source of the cloned HGH complementary DNA in the construction of the expression vector.

To state things clearly, I view it as mandatory that publications are correct in all aspects, including all technical and methodological details. Hence, I deeply regret as contrary to my own principles and the principles of scientific endeavor the technical inaccuracy in the original *Nature* article reporting our pioneering work.

**Peter H. Seeburg**
Department of Molecular Neuroscience, Max

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**The AAAS Board of Directors has established a search committee to identify recommended prospects to succeed Floyd Bloom as editor-in-chief of *Science*. The Board asked the search committee to respond by the end of this year if possible.**

The search committee is chaired by Alice Huang of Caltech, who is also a member of the current AAAS Board of Directors. Other committee members, selected to represent the broad spectrum of disciplines in AAAS, are:

**J. Michael Bishop**
Chancellor, University of California-San Francisco

**Lewis Branscomb**
Professor Emeritus, JFK School of Government
Harvard University

**Mildred Dresselhaus**
Institute Professor, Massachusetts Institute of Technology

**Ursula Goodenough**
Professor, Department of Biology
Washington University

**Ronald Graham**
Chief Scientist Emeritus, AT&T Labs

**Jack Halpern**
Louis Block Distinguished Professor
University of Chicago

**Paul Hoffman**
Publisher & Senior Vice President
Encyclopaedia Britannica, Inc.

**Barbara Iglewski**
Chair, Dept. of Microbiology & Immunology M&D
University of Rochester

**Jane Lubchenco**
Wayne & Gladys Valley Professor of Marine Biology
Oregon State University

**Marcia McNutt**
President & CEO, Monterey Bay Aquarium Research Institute

**Michael Novacek**
Senior Vice President & Provost of Science
American Museum of Natural History

**Richard Nicholson**
Executive Officer, AAAS

**Michael Posner**
Cornell Medical Center/New York Hospital

**Maxine Singer**
President, Carnegie Institution of Washington

**Richard Zare**
Marguerite Blake Wilbur Professor of Chemistry
Stanford University

The search committee would be pleased to receive names of potential candidates for the editor-in-chief position but asks that the names be accompanied by a short justification for the nomination. Suggestions can be sent to the committee's attention via Gretchen Seiler, Executive Secretary to the Search Committee, at AAAS, 1200 New York Avenue, NW, Washington, DC 20005 or via internet at gseiler@aaas.org or via fax at 202-371-9526.

All material will be treated confidentially.

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## Paleolithic Population Growth

The report "Paleolithic population growth pulses evidenced by small animal exploitation" by Mary C. Stiner *et al.* (8 Jan., p. 190) offers an original and compelling argument for inferring paleodemographic conditions among Middle Paleolithic hunter-gatherer populations in the Mediterranean Basin. The analysis based on "slow" and "quick" prey types in the three main archaeological assemblages makes a strong case for a shift from Middle Paleolithic procurement of high-ranked (slow) prey to an early Upper Paleolithic pattern of greater dietary breadth with increased hunting of low-ranked (quick) game types. The posited relationship between dependence upon slow prey and low densities of highly mobile hunter-gatherers during the Middle Paleolithic also seems reasonable. Mobility was probably a key factor in obtaining slow prey, and the archaeological evidence presented is congruent with studies in human ecology that support such a uniformitarian relationship (*1*).

What may not be consistent, however, is the further conclusion that "[l]ow human population densities during most of the Middle Paleolithic imply that group sizes and social networks were small, which certainly limited the numeric scope of individual interactions." Group sizes may have been small, and meetings between groups and individuals may have been infrequent, but this does not mean that social networks were limited or undeveloped. Scholars studying traditional Australian aborigines, particularly those in desert regions where population densities were the lowest and where mobility was extreme (*2*), have long been aware that in these cases social networking was highly developed over wide geographical areas. These networks were supported by marriage rules, kinship behavior, and ritual mechanisms. Often these social relationships were flexible, resulting in "kin cliques," as found among the Kalahari G/wi (*3*). This aspect of hunter-gatherer social life under conditions of high mobility and relatively low population densities (with plenty of "slow" game types present in the diet) is echoed in findings by Lee (*4*) among the !Kung of the Kalahari desert, in which he points out, "If one has good relations with in-laws at different waterholes, one will never go hungry."

These and other historic and ethnographic cases suggest that low population densities and high mobility can sometimes be expected to produce well-developed so-