CORRESPONDENCE

CHALLENGE FROM BIOGEN

To the editor:

In your recent cover story (*Bio/Technology* **3**:605, July '85), you state your premise in your lead paragraph, echoed in the headline, that, "In the eyes of some analysts, Genentech and Cetus have risen above the rest."

This is a significant conclusion, particularly in a respected scientific journal. However, nowhere in your text do you support this proposition with evidence or with the opinion of others. Your story is basically a comparison of two companies, Genentech and Cetus, and does not present any discussion of why they are ahead of any others or provide any quotes from any security analysts supporting your initial conclusion. In the text, all of the analysts you do quote appear to be responding to a question from you to compare Genentech and Cetus and not to an inquiry regarding a ranking of the companies. In fact, if you had included Biogen in your comparisons, we would have often been in a leadership position. For example:

In your discussion of alpha and beta interferon: Biogen/Schering is generally recognized as the leader in developing alpha interferon. Biogen/Scherings's Intron A® was the first cloned and expressed, is the only alpha interferon currently on the market and has had the most extensive clinical testing. Beta, on the other hand remains in Phase II trials ofter years of testing and is of interest to only a few companies.

In your discusion of gamma interferon, you fail to mention that Biogen also holds the lead in the development of this product, having had over 750 patients in clinical trials to date.

In your discussion of TNF, you fail to mention that Biogen is also a leader in the development of this protein, certainly in close competition with the other two companies.

I also do not believe that Peter Drake, Scott King, Steven Zimmer or Bob Kupor, the analysts you quote, are of the opinion that Biogen is no longer one of the key biotechnology companies. Obviously from the content of your story, none were willing to go on record with such a statement and, in my discussion with three of them, they have neither reflected that opinion nor said that they expressed such an opinion to you.

It appears that you began your research with the preconception that Cetus and Genentech were now the big two in biotech. How you arrived at that observation is not explained. What you present in the body of your article is evidence indicating that Genentech is curently in a leadership position with several other companies competing for the number-two spot. However, you did not make the appropriate adjustment in your lead or the headline to reflect these facts.

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SYNZYMES, COZYMES, AND ENZYMES?

To the editor:

With the mushrooming interest in improving enzymes, a whole glossary of new words has come into use. "Artificial," "synthetic," "semisynthetic," "unnatural," "designed," and "engineered" are some of the prefixes attached to enzymes, irrespective of whether these are proteins or other molecules.

There is an overlap and an attendant confusion in the terminology of the various modified, designed, or constructed enzymes. It would be useful to agree on a standard nomenclature for such enzymes or enzyme-like products, so I propose three broad classes: (1) "Synzymes" (*Synthetic enzymes*) to represent non-polypeptide molecules with enzyme-like catalytic rates, such as cyclodextrins or polyethyleneimines. (2) "Conzymes" to represent (*con*verted) protein-based enzymes obtained by physico-chemical manipulation or through protein engineering. (3) "Enzymes" would still be used to refer to natural polypeptide catalysts.

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PLANTS: AMPLIFIED EXPRESSION

The authors of Genetically Engineered Plants: Environmental Issues *(by Holly Hauptli, Nannette Newell, and Robert M. Goodman,* Bio/Technology *3:437, May '85) had wished to amplify their "Government Policy Analysis..." (p.441). The new material was omitted from the published paper, which should have read:*

At present, potential regulatory vehicles for approving the release of genetically engineered plant varieties within the USDA include PVP (Plant Variety Protection), APHIS (Animal and Plant Health Inspection Service), NPGRB (National Plant Genetics Resources Board), and ARRC (Agriculture Recombinant DNA Research Committee). As they now stand, none of these are appropriate to oversee the first field experiments:

- The Plant Variety Protection group does have the advantage of working at the Federal level, but its mission is the protection of intellectual property, not the oversight or regulation of crop plants.
- APHIS is the regulatory arm of the USDA and could be seen as the logical place for rDNA regulations. However, in the plant area, APHIS now has authority solely in importation and interstate transport of agricultural pests. First, it would be stretching its jurisdiction to include intrastate issues. More importantly, it would be treating plants (and presumably animals) containing rDNA as agricultural pests. Psychologically, and maybe in fact, this designation could be very unfortunate for the timely development of new crop varieties. Finally, APHIS oversight has been restricted to consideration of whole species and may not be structured in such a way as to evaluate crop-weed interactions.
- The NPGRB is unlikely to be able to provide oversight for rDNA plants because of the strict membership requirements for the Board. It is composed primarily of plant breeders with little molecular biology expertise.
- The ARRC, established to provide expertise on rDNA in agriculture, is the most likely group to oversee rDNA field trials within USDA. The ARRC would have to be expanded to include a variety of disciplines and to represent the different kinds of laboratories carrying on this research. There may be a problem with the ARRC as an oversight body. This committee is within the Science and Education department of USDA. Because this department also funds research that presumably will lead to field trials of rDNA plants, there is potential for a conflict of interest. It is likely, however, that with a careful choice of committee members who represent government, private institutions, and industry, this conflict would be kept to a minimum.