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THE FIRST WORD

Some Like It Hot: The Miami Bio/Technology Winter Symposium

As always, the Miami *Bio/Technology* Winter symposium features stellar speakers in a comfortable setting—and the *Farmer's Almanac* is predicting a warmer-than-usual-February for Florida, which is welcome news for those planning to attend the meeting who have just come through the northeastern U.S. "blizzard of '96" or other, similar, arctic air-induced events. The Miami symposium has traditionally been a "big tent" meeting, one at which you can, in four days time, get a solid overview of developments in some of the hottest areas of molecular biology and in their biotechnological applications.

This year's theme is "Therapeutic Strategies in Molecular Medicine," and sessions will center around advances in gene therapy, immunotherapy, tissue engineering, and rational drug design. The foundation upon which much of this "therapeutic" work is built is three-tiered: a deeper understanding of the pathways of signal transduction and the role of protein phosphorylation in the control of metabolic function, new knowledge of genes and their functional regulation, and a greater appreciation of the complexities of the immune system. It is only through such combined understanding that we can begin to approach solutions to the diseases of the "biology of complexity," as Leroy Hood and others have chosen to call the 97% of diseases found in industrialized nations that are neither "simply" infectious nor monogenic but extraordinarily complex in nature.

But a look at the program also brings to mind questions about the differences between science and technology and medicine. In giving this meeting its name, we are guilty of the hubris we are quick to point out elsewhere, by making implicit claims for molecular medicine that it is much too early to make. For while a good deal of science and technology will be presented, there is not much in the way of medicine just yet.

Truly scientific medicine is in its embryonic stage, but it is still not too early to see reality pushing its way into the rosy molecular picture. The critical reports of the committees convened to review the National Institutes of Health Recombinant Advisory Committee and gene therapy protocols remind us that, while enthusiasm is called for, so is restraint. The same restraint may also be called for in the case of antisense therapies, as well as in other, less heavily publicized, biotechnology research areas.

It is important to begin making distinctions between technologies that will be most useful as research tools and those that show real promise for practical therapeutic intervention at the level of medicine, in terms of both the state of research and of economic feasibility. It will be particularly important in 1996, given that the biotechnology industry has just come off a very good year. As reported in this issue, over 170 alliances between pharmaceutical and biotechnology companies were forged in 1995—up from a mere 66 the year before. Investors pumped \$3.5 billion into biotechnology public offerings, up from \$1.8 billion in 1994. Good clinical trial news—notably, Cephalon's mid-year phase III clinical trial success with Myotrophin for the treatment of Lou Gehrig's disease and Autoimmune's positive result in phase II with Colloral for the rheumatoid arthritis—helped fuel the financial community's renewed interest in the biotechnology sector. But with refueled financial interest comes a resurgence of hubris and hyperbole, and it is all too easy for those who promise not to promise too much, too often, too early, to forget their good intentions. As a scientific journal serving the biotechnology communities, it is our responsibility to help sort out the technology from the medicine, and the clues from the cures. The Miami meeting has been, and continues to be, an excellent forum in which to exercise that responsibility.

—SUSAN HASSLER

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