MEETING REPORT

# CHARTING THE HYBRIDOMA 'FISHING EXPEDITION'

BALTIMORE, Md.—"While we have seen impressive technological improvements, I think that one has to marvel that hybridoma technology in 1986 is basically the same technology that Milstein and Kohler gave us 10 years ago," said Joseph Davie of the Washington University School of Medicine (St. Louis, MO). He was summing up at the Fifth Annual Congress for Hybridoma Research, which was held concurrently with the Sixth Annual Congress for Recombinant DNA Research here in January. Davie pointed to several areas where he felt hybridoma technology could make an impact in the future:

- application to T-cell products and the production of lymphokines;
- increasing sophistication in the matching of antibodies to specific uses;
- development of ways to detect antigens that are important but as yet unknown (including, for example, those involved in diabetes and rheumatoid arthritis);
- use of monoclonal antibodies to better understand organ-specific antigens; and
- use of monoclonals in an agonist capacity to assist cellular functions by mimicking other cellular substances (instead of as antagonists to identify and kill cells).

The meeting's attendees formed working groups to discuss specific applications of hybridomas. Although each team addressed the technology from a different perspective, some underlying themes emerged. Researchers agreed that they need to determine why monoclonals seem to work well in some cases and poorly or not at all in others. While high antibody affinity and high antigen density on tumor cells are conceptual pluses, a number of researchers found that these did not correlate well with successful imaging or therapy. Some thought blood flow to the tumor could prove equally important. Another enigma was that circulating antigens seem to cause less interference than researchers would have expected. On the issue of using monoclonal antibody "cocktails," there was no consensus: the concept is logical, but the approach may prove unnecessary in some cases.

According to Davie, without hybridomas scientists would not have been able to gain the knowledge they have today about antibody molecules and T-cell receptors. But, he stressed, this kind of dissection has just begun.

While noting that monoclonal antibodies are used in research that results in some 10,000 scientific publications each year—and that these versatile workers are now being employed by hundreds of commercial organizations—Davie described the application of hybridoma technology to diagnosis and therapy so far as a "fishing expedition approach." He foresees more attention being paid to engineering specific antibodies for specific uses. Recombinant antibodies (for example, molecules that contain mouse variable regions along with human constant regions to minimize the reaction of the human immune system) and conjugating antibodies to substances like toxins represent just two promising approaches.

—Arthur Klausner