NIH 'glues' cell biologists together

American research into cell signaling is to benefit from the latest, large-scale National Institutes of Health (NIH) funding initiative. The National Institute of General Medical Sciences (NIGMS) has announced that its first 'glue grant'—a new type of grant designed to fund projects requiring cooperation between investigators at multiple institutions—will provide an estimated $25 million over a period of five years to the Alliance for Cell Signaling, an effort to produce a detailed map of the signal transduction pathways in two types of cells, cardiomyocytes and B cells.

In addition to the NIGMS funding, the alliance is being supported by the pharmaceutical companies Eli Lilly, Johnson & Johnson, the Merck Genome Research Institute, Novartis, Chiron Therapeutics, Aventis and the Agouron Institute. Although each will provide around $500,000 a year, organizers insist that none will gain exclusive access to the data. Biotechnology companies Isis Pharmaceuticals and Myriad Genetics have agreed to provide technical support.

One of the most striking features of the alliance is its stringent prohibition against participating researchers' patenting their findings. Alfred Gilman, a researcher at the University of Texas Southwestern Medical Center and organizer of the project, explains, "as soon as we obtain our data in a form that is deemed to be of sufficient quality, it will go into the public domain" in an online database.

The alliance consists of two groups of researchers: participating investigators at 20 different universities will use NIGMS and corporate funding to elucidate the signaling pathways in cardiomyocytes and B cells, whereas general members of the project will maintain sections of the growing database dedicated to particular molecules.

Focusing on only two cell types simplifies the project, but also narrows the field of participants. "I think that it is an excellent concept," says Joan Brugge, a signal transduction researcher at Harvard Medical School, but "I was not working in the cell systems that [Gilman] chose to work on so it wasn't straightforward for me to join the effort."

A further limitation of the alliance is its lack of participating investigators outside the US, a situation that has raised hackles among some signal transduction researchers in other countries. 'Glue grants' can support research overseas, but Gilman, who shared a 1994 Nobel prize for elucidating the function of G protein-coupled receptors in cell signaling, insists that the geographical limits are technical, not nationalistic. To handle the enormous communication and computing demands of the multi-institution project, the alliance will use Internet 2, the high-speed data network that is available at present only in the US. In addition, says Gilman, "Time zones can be a pain in the neck, too. If we had somebody in England and somebody in Japan who needed to collaborate, that would be a real nuisance."

In a separate effort, the NIH also announced a large-scale initiative to identify differences in the human leukocyte antigen (HLA) complex in populations worldwide. The International Histocompatibility Working Group (IHWG) will comprise 200 laboratories in 70 countries, and will be funded by a $20 million grant over the next five years. IHWG organizers hope to create a searchable HLA database to assist future research on immune-mediated diseases.

Alan Dove, Philadelphia

Teaching hospitals to share tissue with industry

When it comes to genomic research, human tissue left over from surgeries, biopsies and autopsies is a hot commodity. Physician scientists—who spend time both in the clinic and laboratory—have access to it, whereas pharmaceutical scientists do not.

Now, two major teaching hospitals in the US have agreed to supply tumors and other tissue to a newly formed Massachusetts biotech company. In return, Ardais will process the material into products such as DNA and RNA arrays and sell them to scientists. The company announced the deal with Beth Israel Deaconess Medical Center in Boston and Duke University Medical Center in North Carolina last month, noting that they plan to eventually enlist 20 hospitals.

After obtaining patient consent, Ardais will take leftover tissue samples that would otherwise be discarded and freeze them, prepare them for genetic analysis and bank them. Then, the company will supply RNA-quality samples and clinical data to commercial researchers for a profit, and to academic researchers at cost, says company CEO Eric Gordon. In exchange for the tissue, the company is building state-of-the-art tissue banks at Beth Israel and Duke, and will fund the salaries of facility staff.

Gordon says that academic researchers who obtained tissue from Beth Israel and Duke in the past will be able to get it from Ardais in the future at cost price. He expects that fee to be lower than that now charged by hospitals because Ardais can take advantage of economies of scale. However, he would not reveal what such fees might be.

The benefit for Beth Israel, which at present has no tissue bank, is that the hospital gets a new facility and according to Barry Eisenstein, vice president of science and technology at the Boston hospital, "will play a major role in bridging the gap between the information coming out of the Human Genome Project and clinical medicine." Internal review boards approved the plan at both hospitals, and Eisenstein adds that both the company and the hospital have taken steps to ensure the confidentiality of donors.

Until recently, academic scientists operated their own small tissue banks, informally sharing samples with other researchers. But as genomics grows and the pharmaceutical industry hopes to glean information to speed up targeted drug development, more and more scientists are looking for high-quality tissue collections.

The Ardais deal is not the first attempt at formalizing human tissue collection from hospital procedures for research. In 1997, Memorial Sloan-Kettering Cancer Center in New York City and the biotech company Sequana Therapeutics signed a similar agreement that never got off the ground because Sequana was bought and the new parent company nixed the deal.

But not everyone is comfortable with the idea of commercializing human tissue products. Across town from Beth Israel, Frank Haluska runs the Massachusetts General Hospital Tumor Bank. Some tissue is readily available, he says, but other tissue, like prostate tumor tissue, is relatively rare. "Now, you have a researcher who wants them and a company that wants them…how do you resolve that?" His tumor bank avoids the issues that come with supplying industrial researchers by restricting access to academic scientists only, he says.

Tinker Ready, Boston