Genomics boosted as Japan unveils plans for state-funded companies

Tokyo. The Japanese government has surprised the country's genetics research community with the announcement that it is to set up two companies to pursue research and development work in genomics. The companies — one established by the powerful Ministry of International Trade and Industry (MITI) and other by the Ministry of Health and Welfare (MHW) — will each be set up in collaboration with private companies from the pharmaceutical, chemical and optical industries. They will be dedicated to decoding genetic information and developing its applications.

Many researchers have welcomed the promise of large-scale government and industry investment in efforts to decode genetic information and develop its applications. But others remain sceptical, questioning whether Japan has enough skilled researchers and technicians to meet the companies' goals, and expressing reservations about the ability of government organizations to navigate a successful path in such a competitive field.

MITI's company, the Helix Institute, will focus on technology for interpreting the function of genetic sequences — so-called second-generation genomic research. The new company will be headed by Teruhisa Noguchi, vice-president of Yamanouchi, one of Japan's largest pharmaceutical companies, and will receive about ¥6 billion (US$60 million) in investment over six years.

Seventy per cent of this is expected to come from MITI's KEY Technology Center (Key-TECH), a joint venture between MITI and the Ministry of Posts and Telecommunications, set up with interest earned on money obtained from the privatization of government monopolies, including Nippon Telegraph and Telephone (NTT) and the Japan Tobacco Corporation (JTC).

MHW's company has been provisionally named the Pharma-Genocyte Institute, and will receive about ¥4 billion in investment, also over six years. Half of the money will come from the ministry's Office of Drug-Induced Damages, a fund based on a levy on drug sales. This was originally set up to compensate people who suffered unexpected side-effects from prescribed drugs, but as the government rarely pays compensation, the fund grew so large that changes to the law were enacted six years ago to release the money for venture capital investment.

The president of the Pharma-Genocyte Institute is expected to be Noboru Kobayashi, soon to retire as director of the National Center for Children's Disease in Tokyo. The institute will focus on family studies of the Japanese population to identify relationships between specific genes and disease. According to Yoshiro Ohtaki, of the Japan Associated Finance Corporation (JAFCO), a leading venture capital company and key participant in the new ventures, this may be easier in Japan than in other countries because of well-documented family histories.

The Helix Institute is expected to concentrate on new methods for establishing the function of genes, rather than on genetic sequencing. Ohtaki says that the institute's technical strategy will be decided by a committee formed from representatives of MITI and the participating companies, whose first meeting will be held next month.

Some observers, such as Mitsuru Miyata, chief editor of *Nikkei Biotechnology*, feel that it would have made more sense to create a single company funded by both MITI and the MHW. But Miyata claims that this was made impossible by an "irrational struggle between the two ministries", an example of Japan's traditional inter-ministry rivalry. Communication between the two companies will, however, be facilitated by participants such as Yamanouchi, which will invest in both, says Miyata.

Yoshiyuki Sakaki of the Tokyo University Institute of Medical Science, which has its own genome centre, says that he hopes that the creation of the new companies will help to build up a genome research community in Japan. Indeed, as support for genome research in Japan amounts at present to only ¥2 billion or so a year — concentrated in separate programmes funded by the Ministry of Education Sports Science and Culture (Monbusho) and the Science and Technology Agency (STA) — the new money, amounting to ¥10–11 billion to be invested in the two new ventures over 6 years, will constitute a major shot in the arm for the field.

Sakaki also warns that basic research must not be neglected in the rush to capitalize on practical applications of genome research. But his own institute could directly benefit from MITI's investment, as it is tipped by some as the future home of the Helix Institute. Other possibilities include the Kazusa DNA Institute in Chiba Prefecture, east of Tokyo, and Tsukuba Science City, north-west of the capital.

Those concerned about a possible shortage of skilled researchers include Itaru Watanabe, emeritus professor of Keio University. Watanabe says the lack of qualified personnel can be attributed in part to Japan's university system which, he claims, does not produce enough good postgraduates. He argues that the only long-term remedy would be to create new universities independent of the current system, but suggests that, as a partial solution, the two planned companies should attempt to lure back some of the many Japanese researchers now working overseas.

One academic, while agreeing that 'second-generation' genomic research is an important area to which Japan "must contribute", emphasizes that those responsible for the new programmes must maintain international contacts in order to minimize the duplication of research. "I hope the people who head and organize [these programmes] are aware of the competition in this field," he says. **Stephen Barker**

Earth science museum goes into orbit

London. **South Kensington in central London awoke this week to the sounds of construction work on a £12-million scheme to transform the former Geological Museum into what is being billed as "the most exciting and inspiring" Earth sciences complex in the world. A central atrium will introduce visitors to a range of Earth science topics and the forces that have shaped the Earth throughout history, while an escalator will transport them between floors through the centre of an 11-metre-diameter revolving globe (see model, above).**

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The project has two phases. A £1-million donation from the RTZ Corporation will help to fund the first phase, due for completion by July 1996. □