DNA research institute to open in Japan

- Support from local government and industry
- Is this Japan's real human genome project?

Tokyo

AT a time when Japanese scientists are struggling to win significant central government backing for a human genome project, a small local government with the backing of private industry has made the first move. Chiba prefecture, a region that lies on the opposite side of Tokyo Bay from the capital, has just announced plans to build a DNA research institute in a science park that will open in 1993.

Although the institute in Chiba will get no funds from the federal government, it nonetheless has won an official stamp of approval from the federal Ministry of International Trade and Industry (MITI).

Although no one knows exactly how the new institute will fit into government and international plans to sequence the human genome, one of its main functions seems likely to be the actual sequencing of genes, rather than work on related basic research on the human genome. The sequencing job is more a technical than a scientific challenge, and the Chiba institute seems intent on conquering it.

One Japanese scientific adviser to the institute says that there is a close similarity between this institute and a proposal by Akiyoshi Wada, formerly of Tokyo University, to establish a DNA sequencing 'factory' in Japan. Wada's philosophy is that DNA sequencing is not an appropriate activity for scientists but rather is something to be carried out by technicians and machines. Comments from various advisers to the project indicate that the prime role of the Chiba institute will be to provide a non-profit sequencing service for Japanese academics.

What does this imply for the various human genome projects under the administration of the Ministry of Education, Science and Culture, the Science and Technology Agency and the Ministry of Health and Welfare? The striking thing about the Chiba institute is that many of its team of academic advisers also serve as advisers for the small government projects (although it is perhaps not so surprising considering the limited number of distinguished academics involved in this field). One adviser suggests that the Chiba institute will turn out to be the focus of the hard effort and that bright Japanese academics voice support for the other projects simply to draw as much money as possible out of the central government, which is very short of funds because of enormous debts built up during large construction projects in the 1970s, such as the building of bullet train lines.

But while the central government is hungry for cash, local governments have more money on their hands than they know what to do with. The Chiba government, like several other local governments, has decided to invest its surplus cash in a science park and, in particular, DNA research. The Kazusa DNA research institute will be the first institute to open in the Kazusa Academia Park, a collection of largely private-sector research institutes being planned by the Chiba government (see adjacent story).

Susumu Tonegawa of the US Massachusetts Institute of Technology (MIT), who won the 1987 Nobel prize for medicine, and his mentor Itaru Watanabe, vice-president of the Science Council of Japan, were very influential in persuading the Chiba government to establish the new institute. With an initial fund of ¥5,000 million ($40 million), 75 per cent of which will be provided by the local government and most of the rest by industry, the institute will start with a staff of about 70 in 1993, increasing to around 100 once the institute gets into full swing.

Among the private companies that will lend support are Nippon Steel Corporation, Kawasaki Steel Corporation, Tokyo Electric Power Company, Tokyo Gas Company, Hitachi, Mitsui Toatsu Chemicals and several local banks, according to Kenji Goto, deputy director of MITI's office for the Human Frontier Science Programme. MITI will also lend its support by giving an official stamp of approval to the foundation that will back the institute. No central government funding is expected.

According to Chiba government officials, the institute will focus on sequencing important human genes as well as on developing computer systems and software for the analysis of DNA. But, in an apparent contradiction, they say that the institute is "unrelated" to international and domestic government-backed efforts to sequence the human genome. Their reluctance to admit the obvious connection may be political, and is the sort of thing that can be done only in Japan where, provided one takes an acceptable public stance, nobody will interrogate one about one's true intentions.

David Swinbanks

SCIENCE CITIES

From parkland to science park

Tokyo

AT present, the Kazusa Academia Park consists only of tree-covered hills on the opposite side of Tokyo Bay from the capital. But the recent success of Tsukuba science city has inspired Chiba prefecture, where Kazusa will be built, to invest in a high-technology future. By the end of the decade, its backers expect Kazusa to be a small but bustling city that is home not only to the planned DNA research institute but also to a number of industrial research centres for such companies as Fujitsu and Canon.

Ten years ago, the success of science cities seemed far from guaranteed. Tsukuba, located north of Tokyo, had been established by the central government in the 1970s, but the 'city' lacked adequate shops, schools or transportation.

Since the mid-1980s, however, Tsukuba has blossomed. The Tsukuba Science Expo in 1985 brought in hotels, department stores and restaurants, and the past five years have seen an influx of dozens of private company research institutes (see *Nature* 345, 378; 1990).

Now, building science cities and science parks has become all the rage among local governments in Japan, which have far more cash than the nearly bankrupt central government. The Kazusa Academia Park is just one of more than a hundred high-tech centres planned or already under construction, including about ten research cities.

Kazusa will be smaller than the Tsukuba and Kansai science cities, with a planned area of 1,000 hectares (about one-third the size of Tsukuba). While officials of the Chiba Prefecture point to Tsukuba as their source of inspiration, they say they hope to learn from the mistakes there and will concentrate on attracting private sector institutes to the park.

They have already had success in attracting industrial research centres, both large and small. Fujitsu plans a 7,500-person institute that will focus on electronic devices and communications. Ajinomoto, Japan's largest manufacturer of food additives and amino acids, will install 90 researchers to investigate protein and genetic engineering. Other companies that have decided to establish institutes in the park include Canon and Nissan Chemical Industries.

Although Kazusa is isolated now, that is changing. A huge Tokyo Bay Bridge will link the park to Tokyo when the bridge is completed in 1995, and a loop road around the city will bring the park within easy driving distance of Tsukuba science city and Narita international airport.

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