Biotechnology Strategy and International Cooperation

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Introduction

Good morning, ladies and gentlemen.

It is a great pleasure for me to speak here today about Japan's Policy on Biotechnology Strategies.

I was the Minister of State for Science and Technology Policy in the Koizumi Cabinet until September 2002, when I became chairman of the Liberal Democratic Party's Research Council for the Promotion of a Science and Technology-Oriented Nation.

1. Research in the Post-Genome Era

The 21st century is widely considered to be the century of life science, with our advance into the post-genome era.

As we enter this new era, our resources must be concentrated in fields where Japan has advantages in technology. We wish to contribute in the most effective

way, on an international level, to solving the problems confronting humankind.

With this in mind, Japan's post-genome policy emphasizes three aspects: first, research into a genome network; second, analysis of SNPs; and third, analysis of the structures and functions of glycogenes and sugar chains.

(1) Promotion of genome network research

First , we have just launched a genome network research project, as one of our post-genomic strategies in response to the ENCODE program in the U.S.A. The aim of this research is to understand the mechanisms by which the complete set of genes encoded in the human genome develop various functions to form their network. This program is unravelling the function of genes by utilising full-length cDNAs.

(2) Analysis of Single Nucleotide Polymorphisms

Second, we are establishing Biobank Japan,

consisting of DNA and sera from 300,000 patients, and are extensively analyzing SNPs in order to isolate genes of medical importance. This research will allow us to develop novel drugs, as well as to establish “personalized medicine” that permits individualized treatment, and helps us to avoid adverse drug reactions.

(3) Analysis of structures and functions of sugar chains

We are developing automatic synthesizers of useful sugar chains, the structures of which lead to a variety of biomolecular functions. To aid in this, we are cloning and consolidating the genes involved in the process whereby sugars attach to proteins.

Along with giving us the key knowledge necessary to understand the basic principles of life, this type of research facilitates the personalization of medical treatment, and contributes to the advancement of medicine as a whole.

2. Measures to fight zoonotic infectious diseases

In recent years, we have experienced outbreaks of avian influenza, as well as SARS, both of which occurred in Asia.

Zoonotic infectious disease s are a common concern for the international community.

Japan will cooperate with the international community, and do everything in its power to solve this problem.

3. Bioethics issues

Next, I will touch upon ethical issues in biotechnology and life sciences.

New type of therapies using embryonic stem cells and cloning techniques are considered a promising technology that brings us rejection-free cells or tissues for repairing damaged organs.

However, at the same time, we must deal with the

bioethics issues arising from these research activities. Countries around the world are now being forced to deal with the question of whether therapeutic cloning should be allowed or not.

It is essential to humankind that common standards for bioethics be established immediately, with due consideration given to the balance between research and ethics. I look forward to the creation of an international consensus on life science and ethical issues.

I strongly hope that attendance at this conference will participate in a frank exchange of views on bioethics issues, in order to create an international consensus for the next step.

4. International Cooperation

The explosive progress of science and technology in the past century has brought prosperity and enriched the quality of life for humankind. At the same time, the advance of science and technology raises important

ethical, safety, and environmental issues. This contrast can be described as the “lights and shadows” of science and technology. These issues are beyond the control of any single country, and also of the scientific community alone, because many problems will need to be resolved through the revision of social systems, international collaboration, and the development of common rules.

The “Science and Technology in Society” forum, known as the “STS Forum”, will be held from November 14 to 16 in Kyoto, Japan. The forum will bring together policymakers, business leaders, scientists, and opinion leaders from all over the world, and will provide a chance to jointly address the issues behind the “lights and shadows” I mentioned earlier. Human wisdom must be exercised for proper control.

I would like to ask you to join with the international community, and to participate in discussions in this field.

Finally, I would like to say that Bio Vision Alexandria has brought together people from both developing and

developed nations to discuss biotechnology and mankind’s future.

I believe that discussion on a global level is essential if we are to deal with the questions and issues we are faced with today, and I sincerely hope that this conference will contribute to human progress through biotechnology initiatives.

Thank you very much for your attention.