The Kakenhi Program—Supporting My Research for 40 Years

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Two Major Reforms

Although I turn 79 this year, I am still pursuing my research at Osaka University's Immunology Frontier Research Center. I believe it is the fact that I was able to continue my research during my six-year tenure as president that has enabled me to continue working at the forefront of global research 15 years after retiring from the aforementioned position in 2003. It was the **continued** support under the Grant-in-Aid for Specially Promoted Research category that made it possible to continue with my research while concurrently serving as president.

At the time, program rules stated that "president" was an administrative role, not a professorship. Accordingly, those serving as the president of a university were not eligible for Kakenhi grants. However, after communicating my strong desire and receiving the understanding of the former Ministry of Education, Science, Sports and Culture, I was able to **continue** receiving Kakenhi grants and keep my research laboratory running. If I had not been personally conducting research, attending academic conferences or reading papers would not have carried the same weight, merely coming across as knowledge from a completely difference sphere. I would not have been able to generate anything new as a researcher.

Accordingly, the first rule of the Kakenhi program I was involved in changing was expanding the scope to include presidential posts, and I believe this policy remains in place day.

The next point I would like to make is that the most important aspect of scientific research is **continuity**. I was personally able to receive support under the Grant-in-Aid for Specially Promoted Research category on an ongoing basis from my first grant in 1985 through to 2003. At the time the initial grant had finished, a strict rule existed that the Grant-in-Aid for Specially Promoted Research was a once-only grant and researchers could not apply to **continue** the same research. Again, I voiced my doubts about this policy. If support comes to an end after only one grant of 4-5 years, it often ends up being wasted. An outstanding piece of research can only be born when the process is allowed to flow **undisturbed**, like a great river. Under the US grant system, research is more highly appraised the longer it continues, and the longer it receives grants. I argued that Kakenhi grants was not a one-off "reward" for researchers.

As a result, the rules were altered to allow researchers to **continue** pursuing the same research topic if they slightly altered the title of their proposal, which, as I mentioned previously, enabled me to receive the Grant-in-Aid for Specially Promoted Research on successive occasions **through to** my retirement as president. As such, the second major reform I was involved in was the shift to a system which allowed promising research to

be continued.

The Grant-in-Aid for Specially Promoted Research that I received **over the long-term** provided a significant boost to my life's work. Each of the discoveries that I made—from identification of IL-6, to elucidation of its receptor system and signal transduction mechanism—were groundbreaking developments at the time. This research would subsequently lead to identification of disease mechanisms and development of treatments for abnormal production of IL-6 and related diseases such as rheumatoid arthritis, vasculitis, and Castleman's disease—all of which were previously untreatable.

The antibody associated with the IL-6 receptor was developed into Japan's first antibody preparation in a joint project with Chugai Pharmaceutical. Today, the formulation produced by Chugai and Roche currently delivers relief to approximately one million patients in 113 countries around the world. Royalties from this blockbuster antibody preparation, which recorded worldwide sales of approximately 200 billion yen last year, are used to support foreign students studying in Japan as well as the efforts of a wide variety of researchers, such as the Japanese Society for Immunology. In this way, the original Kakenhi grants from the Ministry of Education, Science, Sports and Culture, which supported my research over a significant time frame, have ultimately generated support for many researchers today.

Looking back, this research began more than 40 years ago. Is it realistic to expect the current publicly-funded research projects, which call for findings to be delivered within a three, five, or ten year time frame, to generate revolutionary Japan-led treatments?

In my case, I received 50 million yen a year under the Grant-in-Aid for Specially Promoted Research category. Current research grants in this category can amount to several hundred million yen. Are these large grants really necessary in order to generate unique research findings? I always advise researchers to "rely on your brain, not money." The other point I stress to researchers is that a research topic should **be pursued over decades**. Only by doing so can we generate real-world output that exceeds the current imagination.