



Shiro Miwa, MD
1926-2006

A Tribute to Dr. Shiro Miwa

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Dr. Shiro Miwa, one of the most distinguished international leaders of hematology, particularly in the field of hemolytic anemia, who had acted as Standing Director of the Japanese Society of Hematology, passed away from pneumonia in the early morning on January 12, 2006. Here I would like to look back upon his achievements with deep respect and gratitude for his contributions to the progress of hematology.

Dr. Miwa (born in 1926) graduated from the Faculty of Medicine, the University of Tokyo in 1951. Immediately after graduation, he joined the 3rd Department of Internal Medicine, chaired by the late Professor Shigeo Okinaka, University of Tokyo (UT), where, being surrounded by his seniors, such as Drs. Kiku Nakao and Kazuo Miyoshi, he began his professional career in medical sciences following clinical training. In 1959 he moved to Professor William N. Valentine's laboratory at the University of California, Los Angeles (UCLA) for further study in hematology. In this laboratory he discovered pyruvate kinase (PK) deficiency, a novel clinical entity of hereditary nonspherocytic hemolytic anemia (HNSNA), in collaboration with Dr. W.N. Valentine and Dr. Kouichi R. Tanaka in 1961. This discovery, a milestone in the progress in research of hemolysis, determined his research direction thereafter. Thus, after having returned to the 3rd Department of Internal Medicine, UT, he planned new clinical and basic research subjects on hemolytic anemia and put them into execution, while being engaged in educational and instructional works for medical students and young researchers. His research environment in those days cannot have been as good as

now, but he discovered the first Japanese family of PK deficiency (1965) and other deficiencies of erythrocyte enzymes, such as glucose-6-phosphate dehydrogenase (1965) and H-subunit of lactate dehydrogenase (1971). Most investigators and practitioners in those days must have been favorably and strongly impressed by his earnest research attitude.

In 1971, having been highly esteemed because of his remarkable achievements both at UCLA and UT, he was invited to be Professor and Chairman of the Department of Medicine at Yamaguchi University. There he trained many students into excellent clinical scientists, and, together with them, accumulated achievements one after another. They include discoveries of erythrocyte phosphofructokinase deficiency and phosphoglycerate kinase deficiency (1972), standardization of the detecting methods for erythrocyte enzyme deficiencies, demonstration of the expression of aberrant enzyme as causes of PK deficiency, which was published as *The Recommended Methods for the Characterization of Red Cell Pyruvate Kinase Variant* (Report of the Working Group of the International Committee for Standardization in Hematology [ICSH] Expert Panel on Red Cell Enzymes, 1979), and so on.

In 1979 he returned again to Tokyo as Professor of Medicine, according to the request of the Institute of Medical Sciences, the University of Tokyo (IMSUT). During the 9-year tenure in this position at IMSUT, he completed the reformation of the attached hospital system and the replacement of many old staffs with new ones so that the hospital could function as a clinical center for hematological diseases. He

also continuously challenged newer research subjects resulting in the identification of molecular defects in aldolase A (1987) and adenylate kinase (1989) associated with HNSHA, success in molecular cloning of human liver-type PK cDNA (1988), discovery of a PK gene mutation (1991), development a genetic diagnosis system of erythrocyte PK as well as glucose-6-phosphate dehydrogenase deficiencies, and finding a novel mice model of PK deficiency (1995).

Soon after he reached the retirement age as defined by UT, he was invited to be Director of the Okinaka Memorial Institute for Medical Research in Tokyo, where he continued to warmly and gently respond at any time for any patient or investigator consultation until just before his death.

In addition to the above history, there are two things that must be mentioned specially. One is that he played important roles in our cooperation with international scientific societies, such as the American Society of Hematology, the International Society of Hematology, and the Asian Hematologist Association, by successively holding important posts, and another is that he completed as an

author or an editorial supervisor many important hematology textbooks indispensable for clinical and basic hematologists.

The past 40 years of the late Professor Miwa's career look just like a process of practice based on the late Professor Shigeo Okinaka's belief, "To be a practitioner is to be an excellent researcher," the importance of which Professor Miwa often spoke about in life. We can see in him one ideal image as clinical scientists, and we cannot but say that we lost a great leader in hematology.

With only my choicest regards,

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