

## In Memorium

### *Yasutomi Nishizuka* *1932–2004*

We just received sad news that Professor Yasutomi Nishizuka died on November 4, 2004, in Kobe, Japan, resulting from subarachnoid hemorrhage. He was 72 years old. During his life, Professor Nishizuka was an innovative scientist, an enthusiastic colleague, and a great friend to many of us. Although I have never worked with Professor Nishizuka, I have a great deal of affection for this gifted person as well as admiration for his incalculable contributions to biomedicine.

Dr. Nishizuka was born in Ashiya, Japan, on July 12, 1932. He received his MD from Kyoto University in 1957 and his PhD from the same institution in 1963. He was the first graduate student of Professor Osamu Hayaishi. Dr. Nishizuka held academic appointments at Kyoto University Faculty of Medicine from 1962 to 1968, and in 1969 he became Professor and Chairman of the Department of Biochemistry of the Kobe University School of Medicine. While at Kobe University he held dual appointments in the Departments of Cell Biology and Biology, and in 1992 he was named Director of the Biosignal Research Center at the University. Other academic appointments he held included Visiting Research Fellow (1964–1965) at the Rockefeller University, New York, and Professor at the Virus Research Institute (1994–1995), Kyoto University. He retired in 2001, but accepted an appointment to the Board of the Clinical Research Institute of the local government, Hyogo Prefecture. He received many distinguished awards and recognitions, including the Gairdner Foundation International Award (Canada), the Albert Lasker Basic Medical Research Award (US), the Kyoto Prize in Basic Science (Japan), the Wolf Prize in Medicine (Israel), and the Jimenez Diaz Award (Spain). Furthermore, he was awarded medals from the Order of Culture (from the Emperor of Japan), the Dale Medal (from the British Endocrine Societies), and the Banajee Medal (from the Asiatic Soci-



**Fig. 1** Yasu Nishizuka in the garden of Nicolas and Haydee Bazan, New Orleans, LA, June, 1990.



**Fig. 2. (From left to right) Edmond Fischer (Nobel Laureate, 1992), Nicolas Bazan, Yasutomi Nishizuka, and Michael Moskowitz (Massachusetts General Hospital), in May 1993, Madrid, Spain, on the occasion of their being made Foreign Members of the Royal Academy of Sciences, Spain.**

ety, India). In addition, he was a member or honorary or associate member of the National Academy of Sciences (US), the Royal Society (UK), the Japan Academy (Japan), l'Academie des Sciences (France), the American Academy of Arts and Sciences (US), and le Real Academia de Ciencias (Spain; *see* Fig. 2.). Dr. Nishizuka was awarded honorary degrees from Emory University, Atlanta, in 1984 and Northwestern University, Evanston, in 1994. He was a member of the Editorial Advisory Boards of several journals, including *Science*,

the *Journal of Clinical Investigation*, and *Molecular Neurobiology*.

The scientific contributions of Dr. Nishizuka are numerous, but the cornerstone was his discovery of protein kinase C (PKC). With this discovery, he brought into perspective the regulation of protein phosphorylation, the specific requirements for lipids in that process, and their implication in the mechanisms of cell signaling and the modulation of multiple cellular functions. Throughout the years, Dr. Nishizuka also discovered multiple subtypes



**Fig. 3.** (From left to right) Paul Mandel (Strasbourg, France); Julius Axelrod (Nobel Laureate, 1970); Mrs. Bernard Agranoff; Nicolas Bazan; Bernard Agranoff (University of Michigan); Tim Hawthorne (Nottingham, UK); and Yasutomi Nishizuka at the *Phospholipids in the Nervous System: Biochemical and Molecular Pathology*, Satellite Symposium of the ISN/ASN Joint Meeting, Puerto La Cruz, Venezuela, 1986.

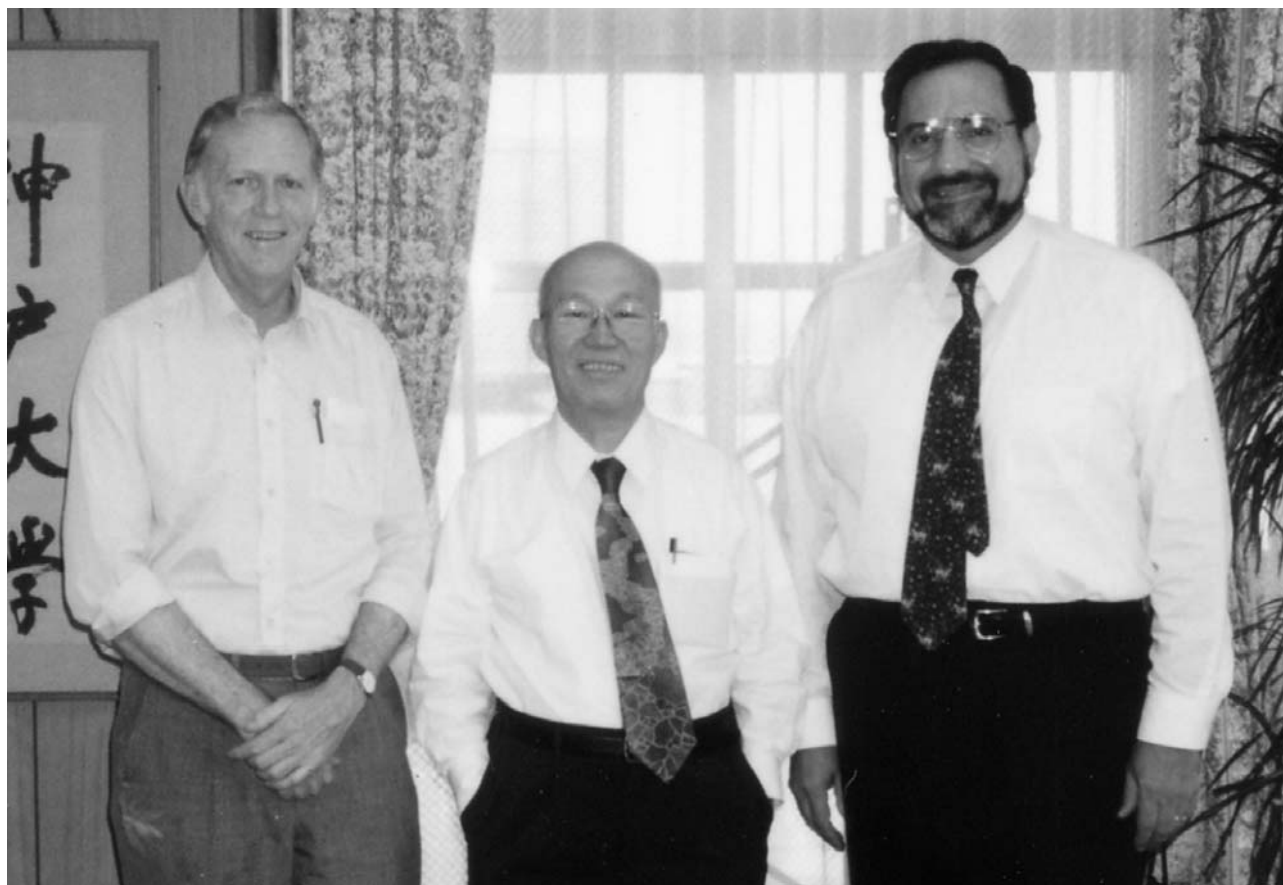
of protein kinases, including several isoforms of PKC, some of which are not tightly regulated by lipids. This is still a very active area of investigation that will provide important insights into cellular function and the mechanisms of disease.

In the late 1970s, I first heard about the discovery of protein kinase C at a meeting of the Argentina Society of Biochemistry, through Dr. Jorge Allende of Chile, who had just returned from the Cold Spring Harbor meeting where Professor Nishizuka presented a lecture. Jorge was so stimulated by the ground-breaking findings that we assembled a collaboration to explore phospholipid requirements for protein kinase activity in my laboratory. Dr. Carmen Gonzales from Dr. Allende's research team spent some time in my lab performing these joint experiments.

I finally met Dr. Nishizuka in the early 1980s, and whenever we met thereafter, we spent our

time together discussing cell signaling. In 1983, in Birmingham, UK, our friend Bob Mitchell hosted a memorable party at his house, where we gathered with Dr. Nishizuka and enjoyed countless hours exchanging ideas.

In conclusion, I would like to share a more personal recollection of Yasu, as we affectionately called him (Fig. 1.). He became a founding member of the Editorial Advisory Board of *Molecular Neurobiology*. He was an active member of the Board for 18 years. He was honored by the city of New Orleans and by Louisiana State University during the course of his visits. Yasu invariably spent quality time with young faculty and students, and very often generously provided reagents. In 1986, he delivered a visionary plenary lecture at the lipid signaling meeting in Puerto La Cruz, Venezuela (Fig. 3.). I was honored to be invited to visit him at the University of Kobe on several occasions. My last visit coincided with that of Michael



**Fig. 4.** (From left to right) Michael Berridge (Cambridge University, UK), Yasutomi Nishizuka, and Nicolas Bazan, visiting at the University of Kobe, Japan, while Dr. Nishizuka was President of the University.

Berridge of Cambridge, UK, at the time that Yasu was President of the University of Kobe. Figure 4 is a photograph that was taken in his office at the University of Kobe. These photographs evoke vivid images for me, and bring to mind the fondest memories of an outstanding scientist and great human being whom we

are going to miss. Yasu Nishizuka is survived by his wife, Sachiko, and his daughters, Yukiko Tanaka and Tsukiko Hanibuchi.

*Nicolas Bazan, MD  
Editor-in-Chief*