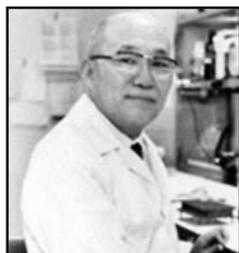


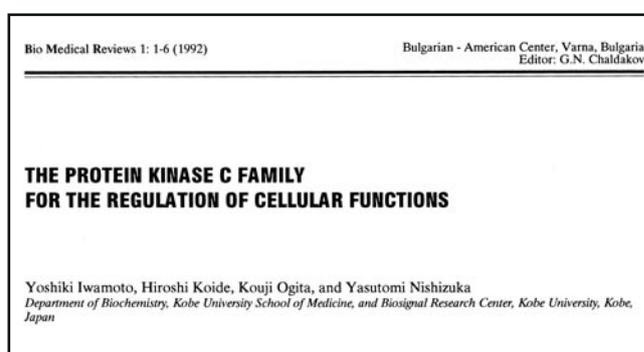
IN MEMORIAM

YASUTOMI NISHIZUKA: THE DISCOVERER OF PROTEIN KINASE C

Yasutomi Nishizuka, former President and Professor Emeritus of Kobe University, Kobe, Japan, died suddenly on 4 November, 2004. Members of the world biomedical community are sadly missing you, Nishizuka Senn-sei.

Nishizuka was born on 12 July, 1932. He obtained his MD from Kyoto University (1957). Completing his PhD work (1962), Dr Nishizuka - except for a year at Rockefeller University with Nobel laureate Fritz Lipmann - remained in Kyoto until 1969 when he landed a job at the Kobe University as professor and head of the Department of Biochemistry. It was there that Nishizuka and his colleagues became intrigued by the role of protein kinases in the regulation of cell functions. Dr Nishizuka became famous by his discovery (1977) of a novel protein kinase that requires membrane phospholipids and Ca^{+2} ions. He named it protein kinase C (PKC). As Dr Hiroshi Yamamoto, Co-editor of *Biomedical Reviews*, remarked: Dr Nishizuka was a scientist who conducted his experiments in a quite strict way; for example, he redistilled water in an apparatus made of quartz, not glass, to completely remove Ca^{+2} ions; this also contributed to the discovery of PKC.

Nishizuka and coworkers found that diacylglycerol, a novel second messenger generated by receptor-stimulated phosphatidylinositol hydrolysis, is effective in enhancing and sustaining PKC activation, the sustained activation being involved in long-term physiological responses such as cell proliferation and differentiation (in Nishizuka Y. Guest Editor of a special issue on signal transduction crosstalks published in *Trends Biochem Sci* October 1992). Nishizuka and his colleagues also discovered that PKC is the target



of tumor-promoting phorbol esters. Thus the PKC family of proteins was positioned at the heart of our understanding of the dynamic aspects of normal and pathological cell control.

Dr Nishizuka received many awards, including the Order of Culture (Japan, 1988), the Albert Lasker Basic Medical Research Award (1989), the Kyoto Prize (1992), the Wolf Prize in Medicine (1995), the Schering Prize (1995) and others. He was a member of many academies, including the National Academy of Sciences of the USA (1988) and the United Kingdom Royal Society (1990). Although Nishizuka's papers have collected more than 40,000 citations to date, the Nobel Committee for Physiology or Medicine failed to award him a Nobel prize.

Dr Nishizuka also published many review articles, one of them (*Nature* 1984; 308: 693-698) being the most-cited publication of the 1980's. We are proud we invited Yasutomi Nishizuka as the first contributor to *Biomedical Reviews* (from which the figure comes).

George N. Chaldakov
Editor, *Biomedical Reviews*