



## Profile

Dr. Eimei Sato was born in 1948 in Hokkaido, Japan. He graduated in Agricultural Science from Kyoto University in 1971 and gained his doctorate in animal reproduction in 1979. He was appointed as Assistant Professor of Functional Morphology and Physiology in Domestic Animals, Department of Animal Science, Faculty of Agriculture, Kyoto University. Next he worked for two and a half years at Rockefeller University, New York, from 1982 to 1985 as the post-doctoral fellow of the Rockefeller Foundation. In 1987, he was promoted to the post of Associate Professor in the Department of Animal Science, Kyoto University. He then moved to the Department of Reproductive and Developmental Biology at the Institute of Medical Science, The University of Tokyo, and worked for 5 years as Associate Professor. In 1997, he was appointed as full professor at the Laboratory of Animal Reproduction, Graduate School of Agricultural Science, Tohoku University.

He received the Distinguished Scientist Award from the Japanese Society of Animal Science in 1991, the Japan Prize of Agricultural Science in 2005, and the AAAP Animal Science Award in 2006, which are the most prestigious awards in the field of animal and agricultural science in Japan and the Asian-Australasian region.

He is an active member of several scientific societies, especially the Japanese Society of Animal Reproduction (JSAR), the Japanese Society of Fertilization and Implantation (JSFI) and the Japanese Society of Animal Science (JSAS). He has served as the president of JSAR from 2003 to 2006, while he currently serves as the presidents of the JSFI and JSAS (since 2006 and 2007 respectively).

## Research Activities

Dr. Sato established a method for in vitro maturation (IVM) of mammalian oocytes almost 30 years ago. Currently, in Japan, more than 2,000 bovine babies per year are produced using the IVM technique. Dr. Sato's group is now investigating sperm and oocytes for genetic improvement of animals (Fig.1) and the production of genetically excellent, cloned and gene-modified animals. (Fig.2) The recent progress in his group is as follows:

**1) Molecular mechanisms for the acquisition of fertilization ability and reprogramming of somatic cells in oocytes:** Hyaluronan-CD44 molecules are involved in the induction of meiosis resumption (Int.Rev.Cytol.,2004), and the phosphorylation pattern of Akt is meiosis-specific (Dev.Biol.2008). A miniature cloned pig was produced from oocytes obtained using the IVM technique which was originally developed in his laboratory. (Cloning Stem Cell., 2008).

**2) Molecular mechanism of oogenesis and apoptosis of oocytes:** His group has managed to produce a baby from small (diameter < 70  $\mu$ m) mouse follicles by using originally-developed techniques, and have produced mice and cattle offspring from cryopreserved oocytes by using newly-developed techniques (SWEID) (Biol.Reprod., 2004). New techniques for stimulating follicular development by using angiogenic factor genes have already been developed (Biol.Reprod., 2006).

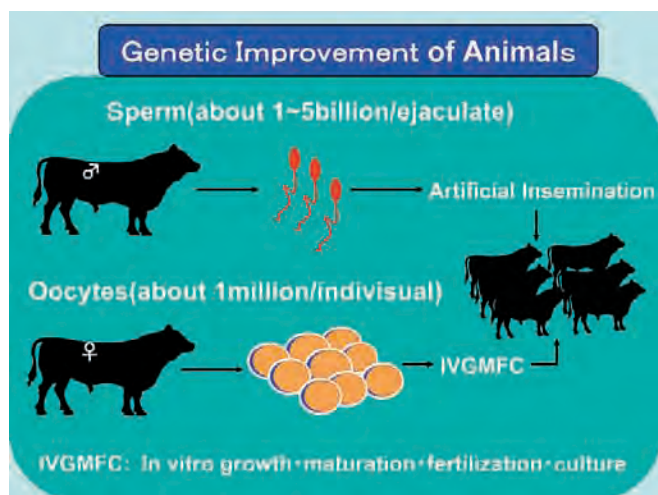


Fig.1

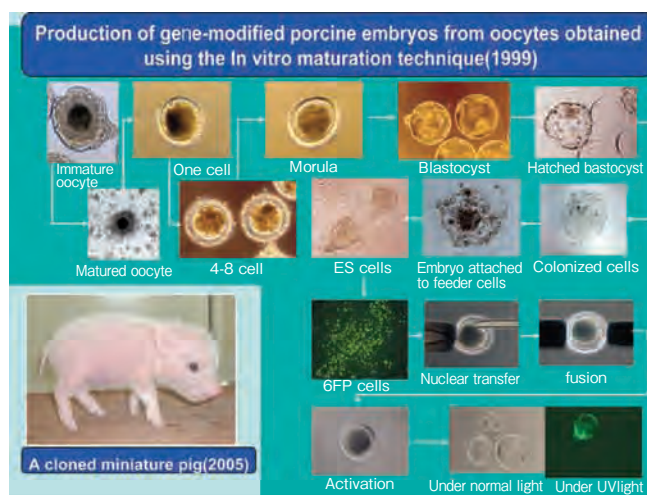


Fig.2

## Message

I worked at the Institute in Moscow just before the collapse of the Soviet Union, just like many Russian scientists who concentrated on their research despite the dire circumstances. Scientists from Baghdad, Iraq presented their papers at the meeting that was held in Tehran, Iran. They said that they had continued their research even during the war. In the USA, I met senior scientists who have received the Nobel Prize, and who, at over 80 years of age, are still conducting personal research. My professor who was my supervisor at the Rockefeller University is now over 80 years old and still continues to do research by himself. I share their strong desire to make a contribution to science, because the prospect of research attracts the human mind and the passion for research enables a human to live under any circumstances.

Sendai is a clean and modern city and its climate is pleasant. It is a favorable city for scientists to conduct their research. I strongly support the proposal (Inoue Plan) of Dr. Inoue, the President of Tohoku University. In Sendai, new initiatives will be accelerated, especially in Tohoku University. By interacting with the students, I will earnestly try to carry on research and education at Tohoku University.