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Animal Cell Technology: Basic & Applied Aspects

Preface

The 19th Annual and International Meeting of the Japanese Association for Animal Cell Technology (JAACT 2006 Kyoto) was held at the PALULU Plaza Kyoto in Kyoto, Japan from September 25 to 28, 2006. The meeting chairman was Prof. Koji Ikura, Kyoto Institute of Technology. The satellite symposium was also held at Fukuoka on September 22, 2006. The motto of the meeting was “Animal Cell Technology for New Biosciences and Bioindustries”. The meeting focused on recent advancement of animal cell technologies from basic and applied aspects. We invited academic and industrial scientists from all over the world to make the JACT 2006 truly successful and scientifically fruitful. More than 300 participants from 16 countries joined the meeting and gave presentations as follows:

Plenary Lectures

Dr. John Sinden. A front line of stem cell technology.
Dr. Sten Orrenius. Mitochondrial regulation of cell death as a potential target for drug discovery.

Murakami Memorial Lecture

Dr. Gordon Sato. Tissue culture – the unrealized potential.

ESACT Lecture

Dr. John Werenne. Validable single use bioreactor for cell expansion on microcarriers and potentialities of a newly designed digital holographic microscope to follow bioprocesses depending on animal cell culture.
Dr. Mohamed Al-Rubeai. Cell line engineering for controlled proliferation and apoptosis.
Dr. Georg Schmid. Monitoring and control of animal cell culture processes by online capacitance measurement.
Symposia

1. Evaluation of polyphenols as functional constituents in food by animal cells.
2. In vivo analysis of brain function by mouse molecular genetics and imaging.
3. Cellular and molecular mechanism to prevent the brain aging: the role of adult neurogenesis.
4. Ex vivo expansion of stem cells for regenerative medicine.
5. Autophagy as a novel regulatory system for various cell functions.
6. New strategy for rapid development of productive cell lines.
7. Frontline of biologics production.

Thirty-seven oral presentations and 63 poster presentations were brought together on the following themes:

1. Cell culture engineering
2. Production of biologicals
3. Functional cell lines
4. Glycoengineering
5. Immunologicals, monoclonal antibodies, and vaccines
6. Transplantation, artificial organs, and organ substitutes
7. Gene therapy
8. Transgenic animals
9. Safety and regulation
10. Cell regulatory factors and signal transduction
11. Functional substances in food and natural sources
12. Animal cells for in vitro assay
13. Other topics concerning animal cell technology

The Satellite Symposium “New Technologies for Creation of the Century of Life on the Blue Planet Earth”
Dr. Gordon H. Sato. Low technologies to change dessert to mangrove forest.
Dr. Masayoshi Takahashi. Microbubbles and nanobubbles potentially useful for sterilization, environmental remediation, agriculture and fisheries.
Dr. Sen Orrenius. Mitochondria, free radicals, ageing and cell death.
Dr. Sei Sasaki. Aquaporin water channel and diseases.
Dr. Sanetaka Shirahata. Action mechanisms of reduced water for prevention of oxidative stress-related diseases.

Dr. Zbigniew Gadek. “Nordenau phenomenon” – Application of naturally reduced water to therapy. Follow up study upon 411 diabetes patients.

We believe that all participants enjoyed the innumerable Japanese traditional treasures of Kyoto as well as scientific fruits. The editors express their sincere gratitude to all the participants, organizers of the symposia, members of the organizing
committee for their dedication in assuring the success of the meeting. We also deeply thank to the Japan Society for the Promotion of Sciences for their financial supports.

The editors hope this proceedings book of JAACT2006 Kyoto will greatly contribute to the development of animal cell technology or innovation of life science.

The editors
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