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THE ARTERIAL CHEMORECEPTORS
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THE ARTERIAL CHEMORECEPTORS

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Preface

In the general assembly of International Society for Arterial Chemoreception (ISAC) at the XIV Meeting of ISAC in Philadelphia (June, 1999) the membership decided that tentatively the XVI Meeting of the Society will be held in Japan. At the conclusion of the XV ISAC Meeting held in Lyon (France) in November 2002, Hisatake Kondo took of the torch as president of ISAC, and took the responsibility of organizing the XVI Meeting of the Society in Sendai (Japan).

This book contains the Proceedings of XVI ISAC Meeting held at Miyagi Zao Royal Hotel in the suburb of Sendai, Japan, from May 9 to 12, 2005. Hisatake Kondo counted with a group of colleague co-organizers from different Japanese institutions, including Yoshiaki Hayashida from Osaka, Katsuaki Yoshizaki from Akita, Yoko Kameda from Kanagawa, Tatsumi Kusakabe from Tokyo, Yuji Owada from Sendai and Hiroyuki Sakagami also from Sendai. The Scientific Committee was formed by some ISAC members from abroad. Professors Helmut Acker (Germany), Carlos Eyzaguirre (USA), Salvatore Fidone (USA), Robert Fitzgerald (USA), Constancio Gonzalez (Spain), Sukhamay Lahiri (USA), Jean Marc Pequignot (France) and Patricio Zapata (Chile) helped with their advice to take decisions on specific aspects of the scientific programme. Recommendations given by Dr. Prem Kumar (UK), acting treasurer of ISAC, were invaluable to solve last minute contingencies.

In the XVI ISAC Meeting essentially all areas on Arterial Chemoreceptors were covered in the presentations and compiled in this volume. There were presentations on the structure and developmental aspects of the carotid body chemoreceptors, on the molecular biology and biophysical aspects of the ion channels expressed in chemoreceptor cells, on the neurotransmitters and their receptors expressed in the carotid body, on the central integration of the carotid body generated activity and on the systemic effects of the chemoreceptor reflexes. Some important studies on central chemoreceptors, on neuroepithelial bodies and other lung receptors, on hypoxic pulmonary vasoconstriction and on oxygen sensing in endothelial cells widened the scope and enriched the meeting. Probably the areas generating more enthusiastic discussions dealt with the mechanisms of chemoreception. Particularly animated were the discussions on the papers dealing with significance of different potassium channels in the hypoxic activation of chemoreceptor cells and with the role of reactive oxygen species as triggers or modulators of hypoxic transduction cascade.

The Arterial Chemoreceptors meetings have a history of over half a century, and shows alteration of generations. Dr. A. S. Paintal passed away on December 21, 2004. He was an excellent sensory physiologist. His skill and patience to record from single C-fibres allowed him to describe for the first time the J-
Preface

receptors and to characterize many sensory receptors in thoracic and abdominal
viscera. He also contributed to enrich the field of Arterial Chemoreception with
his studies in the aortic and carotid bodies. A tribute to the memory of the late
Paintal was offered and presented in this volume by K. Ravi and V. K. Vijayan
at VP Chest Institute, University of Delhi.

The Heymans-De Castro-Neil Awards for young investigators were given to
C. Wyatt (Scotland), T. Otsubo (USA) and R. Varas (United Kingdom). ISAC
wishes the awardees a fruitful development of their current research projects and
successful scientific careers.

At the business meeting the next Symposium was decided to be held in
Valladolid, Spain, in 2008, with Constancio Gonzalez as the president. The
following Symposium will be held in 2011 in Ontario, Canada with Colin Nurse
as its president. During the assembly, membership discussed the future scope of
ISAC in order to attract a more biomedical scientists. A dilemma emerged: the
interest in widening the scope of the Arterial Chemoreception to get closer the
oxygen (erythropoietin, hypoxic pulmonary vasoconstriction, central nervous
system) and acid (central chemoreceptors) sensing fields, and the risk of losing
our identity as ISAC in the diversity. There was no conclusion, but an agreement
was reached to give the issue into the hand of C. Gonzalez, the president of both
ISAC and the next meeting.

The Symposium was supported by funds from Japan Society for the
Promotion of Science (JSPS) International meeting series, Sankyo Foundation
for Life Science Research Promotion, Tokyo, Japan and Asaoka Eye Clinic
Foundation, Hamamatsu, Japan. We are grateful to them all.

Finally, we are grateful to the participants who visited Sendai-Zao and
contributed to the success of the Symposium. We are particularly grateful to Mr.
Mike van den Bosch and Miss Marie Johnson of Springer for their expert
management of the production of this volume.

The Editors,
Yoshiaki Hayashida (Osaka, Japan)
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