Kazuwa Nakao · Nagahiro Minato
Shinji Uemoto *Editors*

Innovative Medicine

Basic Research and Development

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Preface

Despite rapid and remarkable advances in basic medical science, discoveries in basic science can successfully be translated into clinical applications only after a time-consuming process and, unfortunately, only in extremely rare cases. The process has often been likened to a seemingly endless trip through a long and dark tunnel. The research field of translational science has thus been craved for, to unite basic and clinical sciences and make innovative medical technology a reality.

There are multiple vital steps in the creation of innovative medical technology: development and analysis of optimal animal models of human diseases, interpretation of data from genome science and epidemiology to address human disease and pathology, and establishment of "proof of concept" that plays a pivotal role in transitional to preclinical stages of translational science. Besides drug research and development, great expectations have been harbored for progress in diagnostic technology, new surgical procedures, and new clinical devices and equipment. Original research targets may well be rare diseases. More importantly, one can hope and try to expand the scope of the research into common diseases with the aid of "clinical wisdom."

In 2012, the Uehara Memorial Foundation launched the Innovative Medicine: Basic Research and Development project with the intention of making a contribution to the promotion and acceleration of medical research in Japan. Twenty outstanding Japanese researchers were selected to be part of the project team consisting of basic and clinician scientists, aiming at the goal of innovative medicine.

In the international symposium, held in Tokyo, 15–17 June 2014, fresh new findings of the project team and cutting-edge research developments were presented by leading basic and clinician scientists from around the globe who were invited speakers at the symposium, similarly aiming at the realization of innovative medicine.

Core themes were:

1. Basic research for innovative medicine
2. Translational research for innovative medicine
3. New technology for innovative medicine

We sincerely hope that the symposium has sparked an upsurge of basic medical science, translational research, and the realization of innovation in its true sense in medical science and practice.

We are very grateful for the speakers and participants and are pleased to be able to publish the proceedings of this exciting symposium.

Kyoto, Japan Kazuwa Nakao