

Available online at www.sciencedirect.com

SciVerse ScienceDirect

www.biomed-online.com

Editorial

Biomedicine brings the future nearer

It is my greatest pleasure to introduce the inaugural issue of our journal "BioMedicine". The goal of BioMedicine is to publish peer-reviewed, high-quality articles, especially in the field of translational and personalized medicine, thereby serving as a communication channel between peers and the wider public. More and more outstanding scholars will share their scientific achievements with us and promote the progression of this journal. We believe that this journal will provide updates and articles to advance our knowledge in the field of medicine, and will benefit surmounting medical obstacles in the future.

The resistance of cells and body to repetitive exposures to various stresses has ushered in a new scientific era of biomedicine. This issue features not only basic mechanisms, but also applications in clinical conditions. It has been divided into sections A and B. Section A, receptor biomedicine, is comprised of four papers and highlights the mechanisms of receptors. Paper 1 summarizes the current understanding and emerging impact of nuclear epidermal growth factor receptor (EGFR) pathways and how EGFR translocates into the nucleus in response to ionizing radiation, chemotherapy, and anti-EGFR target agents, in order to facilitate the development of novel strategies to overcome acquired resistance. Paper 2 indicates that NO can upregulate the expression and activity of Src. It also suggests that Src can mediate NF- κ B activation, therefore, the authors perceived a loop of signal amplification to influence the inducible nitric oxide synthase (iNOS)/Src/focal adhesion kinase (FAK) axis for macrophage locomotion in response to engagement of Toll-like receptors. Paper 3 highlights the three known estrogen receptors (ER α , ER β and GPR30). These confer cardioprotective effects against various stresses by preventing myocardial cell apoptosis and cardiac hypertrophy. Accumulating evidence reveals their roles in E2-mediated genomic and nongenomic pathways in cardiomyocytes against various cardiac insults: hypoxia, ischemic-reperfusion injury, sepsis, hypertrophic agents, plus other pro-apoptotic signals. Paper 4 points out that P2X7 receptor activation is a double-edged sword. Strong P2X7R activation-mediated neuron cell death is due to Ca²⁺ overload in the cytosol, and possible perturbation of Ca²⁺ homeostasis involved in the endoplasmic reticulum (ER) and mitochondria. By contrast, a putative role of basal or mild

activity of P2X7R is known to exert anti-apoptotic or proliferative effect in cancer cells, glia and some neuroblastomas. P2X7R activation as a neurotoxic or neurotrophic signal is discussed.

These initial papers are followed by two papers pertain to regenerative biomedicine, highlighting the mechanisms of nerve regeneration and bone biomedical engineering. Paper 5 investigates the effects of electrical stimulation (ES) on peripheral nerve regeneration, using electrical treatment at different intervals, frequencies, and intensities to stimulate nerve segments in silicone rubber chambers. ES has two effects: (1) hindering the growth of regenerating nerves and (2) promoting their recovery. This reveals the importance of applying safe stimulus protocols. Incorrect use of ES could irreversibly damage nerve tissues and delay their regeneration. Paper 6 explains the repair of bone defects with gelatin-based composites. This paper shows that biomaterials, such as gelatin-based composites, are suitable for use as bone replacements, are biocompatible and can be reabsorbed or dissolve naturally as the bone grows, yielding newly remodeled bone. The genipin and Oligomeric proanthocyanidins (OPCs)-cross-linked gelatin/tricalcium phosphate (TCP) composite provides an emerging approach towards effective repair of damaged or diseased skeletal tissue.

In the first issue of BioMedicine, the aforementioned papers will be of great interest to biologists as well as clinicians dedicated to studying mechanisms and applications of receptor functions and regenerative biomedicine. Topics relating to traditional Chinese medicine (TCM) will be the highlight of the next issue of BioMedicine, and will supply valuable information and insight for researchers and investigators of multi-disciplines.

Fuu-Jen Tsai, Editor-in-Chief*
China Medical University, Taichung, Taiwan

*No. 91, Hsueh-Shih Rd, Taichung City, Taiwan, 40402.

Tel.: +886 4 22053366x2041.

E-mail address: d0704@mail.cmuh.org.tw

2211-8020/\$ – see front matter

Copyright © 2011, China Medical University. Published by Elsevier Taiwan LLC. All rights reserved.

doi:10.1016/j.biomed.2011.10.007