

Letter from the Editors

The regular world congress of the International Union of Biochemistry and Molecular Biology (IUBMB) was held in Shanghai in August 2009. This forum takes place regularly every three years and brings together thousands of scientists from all over the world. The sweep of considered questions is broad and covers almost every possible topic, which can be brought under the general umbrella of Life Sciences. It is worth admitting that the World and European International versions of the congress have become less attractive. This is mostly because of the absence of the “stars,” the researchers who have initiated the development of dramatically new trends in science. Scientists with great interest attend more specialized forums, and the ability of the Internet and modern telecommunication often eliminate the necessity for personal communication. In the present case, the Shanghai congress was a pleasant exception. Suffice to say that plenary lectures were given by four Nobel Prize winners – Kurt Wüthrich, Aaron Ciechanover, Sidney Altman, and Luc Montagnier. Three of them made their reports a summary of their work for the Nobel Prize discovery, namely NMR proteins, ubiquitin-dependent processing of proteins, and the world of RNA. Luc Montagnier, the man who discovered the human immunodeficiency virus (2008 prize in physiology and medicine), disappointed the audience because he did not speak on immunodeficiencies but chose to lecture on electromagnetic waves conduction through DNA.

The slogan of the congress “Biomolecules for the Quality of Life” defined the plenary and symposium sessions. Biomedical research was the overriding theme. It was conclusively shown, using several examples, that the discovery of the new signal transduction pathway, enzyme, receptor-ligand low-molecular weight bioregulator inevitably leads to the target-pointed search of a new therapeutic reagent. Not only is the direct work of the research groups devoted to this aim, but the patent and innovation departments of the company working with these researchers are as well. Everything is devoted to achieving efficiency in the work of scientists, could realize in biomedicine. Actually the final states of any research are preclinical and clinical investigations. Such an adequate mechanism has resulted in the introduction of dozens of new revolutionary drugs, whose existence we couldn't have suspected several decades ago. In this connection, the plenary lecture by Japanese scientist Shinya Yamanaka should be considered revolutionary. It centered on the induction of cells pluripotency with the determination of cell factors. In all probability, conditions for cells “reprogram-

ming” will be created soon. Today, the combination of the factors influencing stem cells “reprogramming” and subsequent differentiation has been determined. A separate symposium was dedicated to the problem of genetic reprogramming and signal transduction. There is no doubt that progress in this area will bring mankind closer to a solution to the problem of “cell” and “tissue” therapy.

A separate symposium was dedicated to the molecular basis of socially significant diseases. The revolutionary success in drug design, with the use of combinatorial chemistry methods, leads to the creation of effective cells kinase active receptors' inhibitors. This trend evaluated the basis for new anticancer compounds. This research was summarized in the reports of pioneers in this sphere, Axel Ulrich (Germany) and Joseph Jordan (Israel). Neurodegenerative diseases took a special place in this section. They were considered in reports dedicated to cells' channels, drugs' compounds, which influence the permeability of these channels, and pathologies of proteins folding were examined. In this connection, animal models in which these pathologies developed were scrutinized. Reports by Susan Ackerman and Marie Chesselet were dedicated to the investigation of the neurodegeneration and therapeutic influence on these processes in animal models.

The glycobiology section was quite interesting. There is no doubt that intercellular contacts and signal transduction depend on the cells' “carbohydrates environment.” Reports on cutting-edge proteomic investigations deserved praise. It is possible to say that human proteomic portrait creation is really in process.

The number of reports from Russia has greatly fallen due to the economic difficulties in Russian science. Several forums are held with no Russian participation, and of course this fact doesn't reflect today's condition in life sciences research. The Shanghai forum was a pleasant exception. P.G. Georgiev, E.S. Gromova, S.M. Deyev, O.A. Dontsova, A.M. Egorov, S.A. Nedospasov and the authors of this letter were invited to speak at the symposium.

It is important to mention the developments in Chinese science. Some ten years ago, such a forum with the participation of a great number of Chinese scientists was unimaginable. The right policies of the Chinese government in attracting Chinese scientists living in the U.S. and Europe have yielded results. Institutes and laboratories involved in cutting-edge science have now appeared in China.

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