



Editorial



In the last fifteen years South America has experienced a favourable scientific development contributing valuable research in various fields of the life sciences. In this stimulating context, South American based scientists have substantially increased their rate of publication in the recent years. The present South America Special Issue aims at bringing together for the first time into a single volume a sample of current research in life sciences carried out in the region. We have assembled what we believe is a reputable group of innovative and interdisciplinary researchers, who contributed reviews in a broad range of disciplines in the life sciences, particularly Neuroscience, Molecular, Structural and Stem Cell Biology, Immunology and Cancer.

The topics were selected based on the current focus and production in these fields, and also on the historical development in the region. Despite serious economic and political challenges, a tradition of basic research developed in Argentina. Scientific excellence was reached in 1947 when Bernardo Houssay became Argentina's first scientific Nobel Laureate by winning the prize for Physiology and Medicine. This School in biomedicine and biochemistry lead to the subsequent Nobel Laureates, Federico Leloir in Chemistry in 1970 and Cesar Milstein in Physiology and Medicine in 1984. Such tradition is still influencing current research and has reached an internationally recognized level, fostered in the last 12 years by a public policy promoting research and technology.

The development of neuroscience in South America started at the end of the nineteenth century, with dozens of scientists and neurologists trained in Europe and spreading in Argentina, Brazil, Chile, Uruguay and Peru. This early generation of neuroscientists described some relevant regional diseases such as Cysticercosis, viral encephalitis, Huntington and Chagas disease, among others. More recent generations made valuable contributions in electrophysiology, histology, cell biology and behavioural neuroscience. A program dedicated to neuroscience is being launched in the largest biomedical research institution in South America, The Oswaldo Cruz Foundation in Rio de Janeiro, Brazil. Immunology and Cell Biology are also very strong fields of research in South America. In the last few years, the city of Rio de Janeiro held the International Congress of Immunology (2007) and the World Congress on Cell Biology (2012). Following the pioneering work of Oswaldo Cruz, Salvador Mazza and Carlos Chagas, the South American scientific community largely contributes to the knowledge in infectious diseases, particularly those considered as neglected diseases, such as Chagas disease, Leishmaniasis, Schistosomiasis, and Leprosy among others.

During the last two decades there was a significant increase in the scientific production in South America, based mainly on the

increase in the public investment and the strong commitment of the regional governments with Science and Technology. In regard to the number of researchers, Brazil has a staff of over 100,000, almost two-thirds of South America's scientists, and Argentina has the highest proportion of researchers with nearly 3 per 1000 workers. Brazil and Argentina lead the bi-national collaborative research with over 3000 projects between the two countries. South America, however, still has a relatively low number of registered patents. In the last years major efforts have been made to bring scientists back to their home countries, particularly in Chile, Uruguay, Argentina and Brazil. Notably, the Argentinian RAICES Program and the Brazilian Science without Borders program have made significant contributions.

In this context, the first South-American network for research in Biomedicine has been created and receives funding from the MERCOSUR (the Common Market of the South) through the FOCEM (the Budget for Structural Convergence of MERCOSUR). This network in biomedicine was formed by research institutions from Argentina, Brazil, Paraguay and Uruguay. This is the first time that MERCOSUR financially supports a multi-national project for scientific research and education, suggesting that nowadays investment in science, education and technology is considered a landmark of structural stability for national governments. Among its objectives the biomedicine network aims at studying the biological and epidemiological aspects of diseases, as well as developing excellence in the training of human resources, promoting the acquisition of state of the art technology and the interaction between investigators in the region. This innovative approach of working together with integrated efforts in biomedicine will sow the seeds for other scientific endeavours in South America. The guest Editors of this issue of FEBS Letters are directors of three Institutes participating in the network and celebrate this Special Issue as an interesting and creative initiative to bring together scientists in the region.

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