

# 7<sup>th</sup> World Hematologists Congress

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### **Genomics, gene editing & biological drugs: The bolsters of the new medical paradigm**

In the dawn of this new century, advances in our understanding of the intricate molecular mechanisms of human life in health and disease states are introducing a paradigm shift in medicine. Disruptive innovations in the way of diagnosis, prevention and therapy of most alienating diseases will be carried out are underway. In this lecture we will discuss three major technical developments in genomics, biological drugs design and gene editing, that are significantly reshaping the medical landscape. These developments are the results of the translation of a significant amount of scientific knowledge into medical practices. This knowledge was accumulated in the field of genetics and from the unraveling of the human genome, in biotechnology with genetic engineering and mass production of powerful biological products and in the discovery of a more accurate ways to edit genes. Thanks to the development of such approaches, we are shifting from the conventional use of the empirical 'one drug fits all' therapeutic practice to a novel type of personalized medical practice where rational companion genetic testing will be used to back biological drug clinical efficiency by identifying the most genetically qualified patient subgroup. Precision gene editing will correct all genetic alterations associated with diseases and gene therapy should become a safe and routine procedure. These technologies will definitely bolster medicine in the short term and hematological disorders will be at the forefront of the pathological conditions that will benefit from such technologies. The use of these new technologies is not free from ethical and economic issues that urgently need to be sorted out for this new paradigm to thrive.

### **Biography**

M Dahmani Fathallah is the chair Professor of Medical Biotechnology and International Expert in Biotechnology and Bioproducts Development. He is a certified Innovation Strategist and International Consultant in Medical Biotechnology & Technology Transfer strategies. He received his degrees and training in Molecular Biology, Molecular Genetics and Immunology from the University of Paul Sabatier, Toulouse, France, Oxford University, UK and Harvard University, Boston, MA, USA. He is currently the Dean of the College of Graduate Studies and the Chairman of the PhD Biotechnology program at the Arabian Gulf University Manama-Bahrain. He founded ArabOmIX a Medical Biotech & Technology Transfer consulting office for the MENA Pharma industry. He is a former senior investigator at the Institute Pasteur of Tunis (Head of the Medical Biotechnology Group) and the CSO of JeddahBiocity Inc and CEO/Founder of RethabBiotech Co. He holds five International patents for the development of five biopharmaceutical (Biosimilar & Innovative) products, two of which were licensed to two of the world top 10 biopharmaceutical companies. He authored 70 international scientific papers, three books and several general papers on Bio-economy, Transfer of BioTechnology and Education policies. He pioneered (1986) the development of DNA typing for Forensic purpose and set up 5 service laboratories specialized in DNA-based human profiling. He trained and supervised 25 PhDs, 56 Masters and 15 Medical Biotech engineers. He delivered over 100 lectures and conferences throughout the world. He is the founder and president of the Harvard Alumni of Tunisia and the co-founder of the Arab Policy Institute. He is the recipient of several prestigious international prizes and awards.

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