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From nanogenomics and nanoproteomics new avenues to cancer research and treatment

Recent development by Protein Nanocrystallography, nanoGISAXS and Nanofocussed Synchrotron Radiation open new approaches in structural proteomics towards effective drug design. At the same time the monitoring of gene-gene and protein-protein interactions in SNAP NAPPA microarray by QMC_D nanoconductimetry, Mass Spectrometry, Anodic Porous Alumina and Bioinformatics open new avenues in functional proteomics overcoming the critical limits of fluorescence clinical studies using Nucleic Acid Programmable Protein Arrays or similar. It appears thereby of fundamental importance to combined Nanogenomics and Nanoproteomics to warrant significant advancements in clinical research in general and in cancer treatment in particular. Here, we present our main pertinent findings characterizing several model system and several nanotechnologies, with strong implication also in basic cancer research.

Biography

Claudio Nicolini was born in Udine, Italy. He received the doctoral degree in physics from the University of Padua, in 1967. After serving as Adjunct Professor at the University of Bari, he moved for 17 years to the United States, of which he became citizen since 1974, and was originally at Brown University, MIT, and BNL. He then moved to Temple University School of Medicine, Philadelphia, where after a period of intensive training and research in pathology he became Associate Professor of Pathology and then Professor and Chairman of the Biophysics in 1976. In 1985, he was called as "eminent scientist" to the Chair of Biophysics of the University of Genoa, in Italy until 2012, where he was successively Director of Biophysics Institute, DISTBIMO and CIRSDNNOB. From 1993 until now is Life President of the Fondazione ELBA Nicolini and of the Nanoworld Institute. On 2008 has been elected as a Foreign Member of the Russian Academy of Sciences and on 2010 Honoris Causa Professor of Biophysics and Nanobiotechnology at Moscow State University. He was Chief Editor of Cell Biophysics (USA), Science and Technology Advisor to Italian Prime Minister Craxi, Member of the National Science and Technology Council upon Parliament election, Scientific Director Industrial Consortium CIREF, Founder Technobiochip; President Polo National Bioelectronics, President Scientific Technological Park of Elba Island. He received several awards and prizes and has authored more than 480 publications in international scientific journals (SCI), 35 patents (WPI), 28 books and Series Editor in Bioelectronics (Plenum) and Nanobiotechnology (Pan Stanford). His main scientific activities concerned cancer research, biophysics and nanotechnology, pioneering world-wide chromatin structure-function, bioelectronics and nanobiotechnology.

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