Functional genomics and translational medicine: For diagnostics and targeted therapies in complex diseases

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The technology evolved quite rapidly that we can store, share and analyze genomics data. Preventive medicine outweighs the treatments since it is much cheaper and easier than treatments. Pharmacogenomics is a growing field past, present and future milestones are important to develop non-invasive personalized medicine by using imaging, nanomedicine and genomics. Precision can be supported through functional genomics by thorough basic pathway analysis, evolution, comparative development, anatomy and physiology with metabolomics. The area has an impact on drug discovery, delivery and pharmacology already. Recently, we started to use “pharmacogenomics”. There are a good number of approved drugs in the market based on genomics. Digitized medicine also brings issues related to data analysis, ethical views and medical implementations by physicians. Furthermore, what is all means in terms of regulation, clinical trials and manufacturing will be discussed with a focus on complex diseases for the future of translational medicine.

Biography

Demet Sag is a true Translational Scientist with strong interdisciplinary background and hands on expertise on functional genomics early on her carrier through NATO Advanced Science Institute Grant in Italy. She completed her PhD in 12/1998 at Illinois Institute of Technology on Molecular and Developmental Genetics for embryonic stem cells. She came to US for her graduate education after selection of four international scholarships with full benefit package and allowances to attend scientific meetings, after completing BS in three years as a sum cum laude in Basic and Industrial Microbiology, Ege University. Her Master of Science work on only bacterial hemoglobin carrying bacteria, Vitroscilla, started a growing interest on Warburg effects and cancer development. Thus, her Postdoctoral and scientist works were on translational research at stellar medical centers NIH/NCI, SIU, Duke and UNC School of Medicine as a Postdoctoral, Research Fellow and senior Scientist. Meantime, she taught Anatomy –Physiology, Genetics, Biology, Molecular and Cellular Biology, as a full time or Associate Professor levels. She is the Principal of TransGenomics, a premier consulting service organization for clinical and translational research in genomics, vaccine development, biomarker design and nanomedicine.

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