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ARDs: Connecting the dots

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Ageing is an inevitable process usually characterized with the rise of age-related disorders (ARDs) such as cardiovascular diseases, cancer, arthritis, diabetes, neurodegenerative diseases and others. This greatest challenge faced by our ageing population arises due to the variation in the diseases incidence, prognosis, therapeutic response and toxicity which have been attributed to the complex interplay of genetic variability and environmental factors. Thus, understanding the etiology of ageing, ARDs and hence the investigation of the genetic markers responsible for variation in the individuals response to disease incidence, therapeutic response and lifestyle have been of paramount importance. With the advent in the field of genomics and computing, a lot of biological information on the genetic and environmental components of ageing and ARDs has been generated, however, the studies integrating diverse information to better off in our ability to treat and prevent age-related diseases are lacking. In this regard, we have made an attempt to address the biology of ageing and ARDs using an integrated computational approach. Using the manually curated information from our in-house databases on the genetic variants associated with ARDs (dbAARD), genetic variants modulating the drug response (dbPGX) and the polymorphisms interacting with diet (NutriGene); developing computational prediction tools (such as AGP) and network analysis approach, we have tried to connect the distinct spots in the space to form an informative pattern to solve the maze of human ageing and ARDs. We believe that by using holistic approach we can better understand the biology of ageing and ARDs and can achieve our rationale of personalized nutrition and medicine, thereby approaching near healthy ageing.

Biography

Yasha Hasija is currently working as an Assistant Professor in Department of Biotechnology, Delhi Technological University, India. She has published research papers in journals of high repute and has been awarded several prestigious national and international awards. She is the Project Investigator of sponsored research projects from SERB and CSIR. She is also serving as an Associate/Executive Editor and an Editorial Board Member of many international journals. She has served as an invited expert and has delivered invited technical and memorial talks at several prestigious universities. She is an active Researcher supervising BTech, MTech and PhD students at DTU. Her broad areas of research include genome informatics, genome annotation, microbial informatics, integration of genome-scale data for systems biology and personalized genomics.

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