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Network pharmacology: A futuristic approach for identifying new drug targets in neurodevelopmental disorders

Prachi Srivastava
Amity University, India

Since biological entities are involved in intricate and complex relationships, it is essential to use network biology concepts when learning about biology. Network biology has become a systems-level, integrative approach to the comprehension of these complex interactions in recent years. One technique for condensing enormous data sets to clinically useful knowledge for disease diagnosis, prognosis, and treatment is biological network analysis. We can forecast drug targets for a number of diseases using the network of biological entities. The system biology-based drug targets aid in focusing on the vital biological pathways that contribute to the development and progression of the disease. Drugs can effectively combat multifactorial diseases with the help of the novel strategic approach of system biology assisted pharmacology that combines Computer-Aided Drug Discovery (CADD) with network biology. We have outlined the function and applications of network biology in the current review. These include elucidating the mechanisms underlying complex neurodevelopmental disorders as well as locating key drug targets for conditions like ADHD, Autism, Epilepsy, and Intellectual Disability. A promising strategy for identifying drug targets and pursuing targeted drug discovery for the effective treatment of neurodevelopmental disorders is systems biology.

Recent Publications

1. Study of the impact of light-matter-interaction on the herpesviruses: A quantum field approach³. Paul Levi. Innovation Neha Srivastava, Prekshi Garg, Anurag Singh, Prachi Srivastava. Molecular docking approaches and its significance in assessing the antioxidant properties in different compounds. Edited by Gerald Litwack. Vitamins and Hormones, Academic Press, Volume 121, 2023. Pages 67-80
2. Payal Trivedi, Manmohan Pandey, Pankaj Kumar Rai, Pradyumn Singh & Prachi Srivastava (2022) A meta-analysis of differentially expressed and regulatory genes with their functional enrichment analysis for brain transcriptome data in autism spectrum disorder, Journal of Biomolecular Structure and Dynamics, DOI: 10.1080/07391102.2022.2143900
3. Prekshi Garg, Farrukh Jamal, Prachi Srivastava. Deciphering the role of precursor miR-12136 and miR-8485 in the progression of intellectual disability (ID). IBRO Neuroscience Reports 13 (2022).

Biography

Prachi Srivastava with more than 22 years of experience has made significant research contributions in bioinformatics and neuroinformatics. She has more than 81 publications in journals of high repute, books, book chapters, editorial member at various boards and innumerable abstracts to her credit. She has won many national and international awards and scientific society recognitions during her professional journey. She has also been granted three pipeline and tool copyrights. She has won many awards during her academic and scientific journey including STOX Gold Medal, AEB Best paper presentation award, BRPM award, Faculty appreciation award From DOEACC Lucknow center, 'Parashakti' award of Amity Lucknow Campus for Academic excellence. Recently, she was awarded the coveted international JNS Travel Award (Japan Neuroscience) and also conferred with 'Fellow of the National Academy of Environmental Biology (FNAEB)' along with Meritorious award of AEB. She has guided 11 Ph.D. scholars while 3 are currently working in her guidance. Her zeal to contribute to the research and academics continues to act as a driving force.

psrivastava@amity.edu