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Biomarkers for Diabetic Micro Vascular Complications Aide to Bioinformatics Analysis

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Information Technology and Bioinformatics are playing an important role in the discipline of medicine and empowering the researchers with superior tools and techniques that would yield results of immense utility. The integrated and synergistic effect of these two disciplines helps in an improved diagnosis of Diabetic Micro Vascular Complications. In this paper, the proteins/genes that are responsible for Diabetic Micro Vascular Complications are computationally analyzed using Multiple Sequence Alignment (MSA) to understand the pathophysiology. The in silico methodology employed in the present study has extracted huge amounts of data from various online biological databases. Diabetic Micro Vascular Complications like Diabetic Retinopathy, Diabetic Neuropathy and Diabetic Nephropathy were identified by the thorough analysis of huge data and identifying the proteins that cause these complications. After thorough analysis, different proteins surfaced as primarily responsible for Diabetic Micro Vascular Complications. The present study utilizes the online tool Clustal W for analysis and representation of the data. This tool produces a phylogenetic tree and a number of other outputs. These in silico results can be useful for new therapeutic interventions particularly in the field of biomarker discovery and/or target drug discovery studies. Further research studies in this direction may pave way in discovering preventive and curative aspects of Diabetic Micro Vascular Complications in a holistic way.

Biography

Hanuman Thota is a Professor, VR Siddhartha Engineering College, Vijayawada, India and Scientific Adviser, Pulses Group, Hyderabad, India. Dr. Hanuman Thota is a PhD degree holder in Department of Computer Science and Engineering, Acharya Nagarjuna University, NagarjunaNagar, Guntur, India. His involvement goes beyond the academe as he is also active in professional development activities and community development initiatives.

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