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Network properties of protein domain co-occurrence network

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The structure of the protein domain co-occurrence network is a biological network that has not yet been fully studied. These networks use the co-occurrence of various protein domains in given proteins. In the present study, the network properties of the Domain Co-occurrence Networks (DCN's) of *H. sapiens, M. musculus, D. melanogastor, C. elegans* and *S. cerevisiae* were analyzed. The central domains were identified using closeness centrality and a positive correlation was observed between the central domains and the domain links. Findings suggest that domains with high central values were the hubs. Domains with high and significant central values were found to be involved in many cellular functions, specifically in regulatory and signaling mechanisms. From the results, we may conclude that central domain patterns in the five species were preserved through evolution. The implication of the study is that, genome-wide DCNs contain information that can be used in effectively uncovering differences among specific domains and also in understanding their combinations among different species.

Biography

Arnold Emerson Isaac received his PhD from the School of Bio Sciences and Technology at the VIT University, India. He obtained his Post-doctoral studies at the Weill Cornel Medical College, Qatar. He is currently an associate professor at the VIT University and has eleven years of experience in teaching and academic research.

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