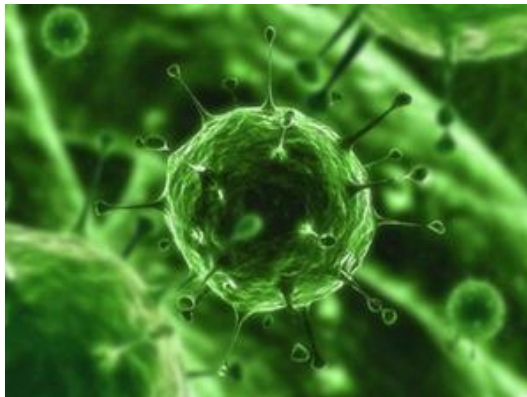


Scientists at NBRC identified gene networks implicated in Japanese Encephalitis Virus infection



Japanese Encephalitis Virus

Japanese encephalitis virus (JEV) manipulates several miRNAs in neurons or microglia cells located in brain and spinal cord leading to development several diseases. Scientists at DBT's autonomous institute National Brain Research Centre (NBRC), Manesar has identified a global change in miRNA in the neural stem cells isolated from aborted human foetus.

Previous reports from NBRC indicated that JEV damages neural stem/progenitor cells of the mammalian brain. In this study, researchers have specifically addressed the reasons for down-regulation of four miRNAs (hsa-miR-9-5p, hsa-miR-22-3p, hsa-miR-124-3p, hsa-miR-132-3p), and subsequently prepared a protein-protein interaction network of miRNA target genes.

The team has successfully identified two types of hub genes in such networks, namely, connector hubs and provincial hubs. Both miRNA target hub genes significantly influence the participation strength in the networks and also impacts up- and down-regulation of several important biological pathways. Computational analysis of such networks helps in identification of important protein interactions and hubs and helps in identification and classification of host factors responsible for viral infection.

The work has been published in prestigious peer reviewed journal *mSphere* published by American Society for Microbiology. Team has anticipated that this study will open up the possibility of precise identification and classification of host factors responsible for JEV infection and future miRNA based therapeutics to improve viral infection outbreak.

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