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Potential Molecular Interceptors against Chikungunya Infection

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Chikungunya is regarded as a potential worldwide public health problem with no preventive or therapeutic measures available till date due to the morbidity and disability caused by chronic arthralgia. Chikungunya viruses are enveloped particles and their genome consists of a linear, single-stranded, positive sense RNA molecule of approximately 11.8 kb which encodes four non-structural proteins and five structural proteins. Chikungunya virus non-structural protein has pivotal roles in viral RNA replication, host cell shut-off and inhibition of antiviral responses. Chikungunya nsP2 protein localizes in the cytoplasm as well as the nucleus of the infected cells where it displays multiple activities such as inducing the cessation of cellular transcription and inhibiting antiviral responses. Currently, there is no specific antiviral therapy or vaccine available for the treatment or prevention of CHIKV infection, which poses the challenges for new therapeutic solutions. However, several plants could offer a rich reserve for drug discovery of infectious diseases. In our research we seek potential molecular interceptors using approved drugs repurposing and medicinal plants, compound or preparations against a chikungunya. Our overall aim of the research is targeting CHIKV functional region proteins for the identification of potential lead molecules from known libraries or from known natural compounds or medicinal plants in order to combat Chikungunya infection. In our findings we have identified few medicinal plants against Chikungunya virus.

Biography:

Ashok Patel is currently working as an Assistant Professor in Kusuma School of Biological Sciences, IIT Delhi. He has done his Ph.D. with Prof. J.V. Medicherla from M.B.U, Institute of Medical Sciences, BHU, India. He has been trained from Prof. David W. Rice, Prof B.W. Dijkstra and Prof. Petri Kursula through travel fellowship by Boehringer Ingelheim Fonds (BIF) Germany. He did postdoc with Prof. Gregory Bowman in Johns Hopkins University, USA. His lab is interested to understand Chikungunya and dengue virus pathogenesis, structural and functional intricacies, host-virus interaction, identification and validation of inhibitors, compounds, medicinal plants against Chikungunya and Dengue.