

MK3, a novel host factor, is essential for chikungunya virus protein translation *in vitro***M Prabhudutta**

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The re-emergence of chikungunya virus (CHIKV) in India after 32 years and its worldwide epidemics has raised a great public health concern. To understand factors contributing to its rapid spread, a biological comparison was carried out between Indian outbreak strains DRDE-06 with the prototype strain S-27. Our results showed that DRDE-06 has faster and higher replication efficiency in comparison to S-27. From our microarray analysis, we short-listed around 1000 host genes that were antagonistically expressed for S-27 and DRDE-06 infected samples. Moreover, it was observed that stress response, cell cycle, translational control and p38MAPK signaling pathways are some of the pathways, modulated during CHIKV infection in mammalian cells. Furthermore, from the above mentioned differentially expressed genes, we have identified a novel host factor MK3 (MAPK activated protein kinase 3) that has a role in the replication of CHIKV. It has been observed that silencing of MK3 through siRNA reduces the production of new viral progenies and viral protein expressions through plaque assay and Western blot analyses. It was also found that siRNA treatment blocked the phosphorylation and activation of its downstream signaling molecules like Hsp27 and Akt, thereby inhibiting the cell survival pathway. Moreover, pMK3 was found to colocalize and interact with the CHIKV-nsP2 protein during infection. Hence, this study indicates that MK3 is an essential host factor for CHIKV infection and may provide new insight into nsP2-host protein interaction for viral protein translation which has potential to develop control strategies for CHIKV infection in future.

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Consecutive infection with influenza A and influenza B virus after devastating earthquake in Dolakha district, Nepal**Surya Subedi, Abhiyan Gautam**¹Tribhuvan University, Nepal²Kathmandu University, Nepal

The great earthquake of magnitude 7.8 MW hit on April 25, 2015 killed over 8000 peoples, injured more than 21000 and many are missing. The great earthquake was followed by hundreds of aftershocks in which Dolakha was struck again by earthquake on 12 May with epicenter in Dolakha district with magnitude of 7.3 MW followed by hundreds of aftershocks in which about 87% houses were fully damaged. In Nepal outbreak of influenza usually occurs between December and March. After the devastating earthquake, outbreak of influenza occurred in February 2016 and they were confirmed as influenza A (H₃N₂) and influenza B. After local public health centre (PHC) reported the symptoms, medical team went and suspected it as influenza outbreak in first and second case. Investigation was made where the patients were suffering from common symptoms. Public awareness program was conducted immediately at different places. Samples were collected and dispatched to laboratory immediately which was subjected to reverse transcription PCR for sub-typing of influenza. The first outbreak was prevalent in all age groups and the rate of transmission was high. No death was reported in this outbreak whereas complications whereas three were suffered from pneumonia while one from bronchitis. The first outbreak was confirmed as (H₃N₂). The second outbreak was only in children of age below 14. Among 300 children, 246 were suffered from infection. Symptoms were common in all children. No complications were seen beside general symptoms. It was confirmed as influenza B on lab diagnosis. Influenza can outbreak in disastrous area in epidemic influenza season. The transmission route is direct contact with infected person, use of person goods, sharing of room, space and by aerosols. If public awareness and care taken, it can be controlled.

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