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Multiplex single nucleotide polymorphism assay to investigate multiple genes as host genetic risk factors for *Enterovirus A71* infection severity**Shyam Sundar Nandi**

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Enterovirus A71 (EV-A71) causes a variety of diseases like Hand Foot and Mouth Disease (HFMD), Acute Flaccid Paralysis (AFP), meningitis and encephalitis with severe complications and death. It has caused large scale outbreaks of HFMD with severe complications in Malaysia, Taiwan, Singapore and China since 1997. In 2008, EV-A71 caused nearly half millions HFMD cases and killed 126 people in 2008 and more than 1.6 million cases in China and 509 deaths in 2011 in China. About 140,000 HFMD cases have been recorded in China in first quarter of 2018. In India EV-A71 has been isolated sporadically from AFP, encephalitis patients and apparently healthy children. However, no EV-A71 caused outbreaks of HFMD or AFP have been reported in India. The reasons for this have not been explored. Recent research reports have identified point mutations (SNPs) in a small number of host genes leading to susceptibility to severe EV-A71 infections. EV-A71 genetic susceptibility markers are located on a number of different genes. Therefore multiple region sequencing or deep sequencing (NGS) methods are used to identify the SNPs at the specific sites. The objectives of the study were to design a rapid and simple method to detect the EV-A71 genetic susceptibility markers and to determine prevalence of the EV-A71 genetic susceptibility markers in Indian populations. Multiplexed single nucleotide polymorphism assays (two) were designed and developed to probe 15 SNPs in 12 different genes (IPR Submitted). The assay is useful for large scale screening of populations for EV-A71 infection outcome.

Biography

Shyam Sundar Nandi is currently in his research studies at ICMR-National Institute of Virology Mumbai, India. His main areas of work are Application of Biotechnology to study enteroviruses, development diagnostic assays, application of CRISPR Cas9 technology to engineer cell strains and enteroviruses.

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