



Dept. of MBBT 1st Alumni Lecture Series 2023-24

Molecular Mechanisms of Attenuation of the Japanese Encephalitis Live Attenuated Vaccine SA14-14-2

Date: 17th November 2023

Time: 4:00 PM– 5:00 PM

Venue: EVS Seminar Hall



Abstract: The well-characterized Japanese encephalitis live attenuated vaccine virus SA14-14-2 has been widely used in China and other Asian countries. Large scale vaccination in more than 300 million children has shown an excellent safety profile, genetic stability and efficacy. SA14-14-2 has harboured 29 amino-acid changes from its parent strain SA14, majority of which (8 amino-acids) lies in envelope protein and have been attributed to its attenuated phenotype. A single nucleotide mutation A to G in NS2a region abrogates the formation of NS1prime (NS1') protein in SA14-14-2 which has also been elucidated in loss of virulence and neuroinvasiveness. We demonstrated biochemically that the folding of E-glycoprotein of SA14-14-2 is very sluggish as compared to wild-type P20778 JE virus, hence it causes enhanced ER stress and autophagy in infected cells which can be used as surrogate markers to design other potent vaccine strains.



Dr. Saurabh Kumar
MSc MBBT 2008-10 batch
PhD IISc Bangalore
Post Doctoral Fellow
NIAID, NIH, Bethesda, Maryland USA