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### **Conserved epitopes of DENV structural and non-structural proteins for exploring universal vaccine targets**

Dengue is a severe emerging arthropod-borne viral disease occurring globally. Around two-fifths of the world's population or up to 3.9 billion people are at a risk of dengue infection. Infection induces a life-long protective immunity to the homologous serotype but confers only partial and transient protection against subsequent infection against other serotypes. Thus, there is a need for a vaccine which is capable of providing a lifelong protection against all the serotypes of dengue virus. In our study, comparative genomics of Dengue virus (DENV) was conducted to explore potential candidates for novel vaccine targets. From our analysis we successfully found 100% conserved epitopes in Envelope protein (RCPTQGE);

NS3 (SAAQRRGR, PGTSGSPI); NS4A (QRTPDNQL); NS4B (LQAKATREAQKRA) and NS5 proteins (QRGSGQV) in all DENV serotypes. Some serotype specific conserved motifs were also found in NS1, NS5, Capsid, PrM and Envelope proteins. Using comparative genomics and immune informatics approach, we could find conserved epitopes which can be explored as peptide vaccine candidates to combat dengue worldwide. Serotype-specific epitopes can also be exploited for rapid diagnostics. All ten proteins are explored to find the conserved epitopes in DENV serotypes, thus making it the most extensively studied viral genome so far.

#### **Biography**

Mansi Verma is an Assistant Professor at Sri Venkateswara College, Delhi University, India. She received her Bachelor's and Master's degree in Zoology, and completed PhD in Molecular Biology in 2011 from University of Delhi. She was recently awarded as Young Scientist by Association of Microbiologists of India (AMI) and has contributed 23 research articles in journals of International reputation. She has also published 2 chapters of international reputation, 8 e-chapters and 1 book chapter. She has participated in more than 15 Conferences/ workshops and presented more than 28 posters. She has successfully completed 3 projects as Principal Investigator. She was also awarded with Certificate of Appreciation for presenting research work as a poster presentation at the 94th Foundation Day of University of Delhi at Viceregal Lodge on May 1, 2016.

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