

## Genomic characterization of Buffalo poxvirus B5R gene, Pakistan

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Buffalo poxvirus, a strain of vaccinia virus and causative agent of buffalo pox, is a member of the genus *Orthopoxvirus* family *Poxviridae*. Infection by buffalo poxvirus is characterized by the lesions on the udder and teats, which may lead to development of mastitis in dairy buffalo and can severely effect the milk production. The B5R gene of buffalo poxvirus is an integral component of viral replication and an antagonistic to host immune responses as has been demonstrated in vaccinia virus. To ascertain the genetic nature of circulating buffalo poxviruses in Pakistani livestock population, pastures from udder and teats of infected buffalo were collected. The BHK21 cells were infected with the clinical material and 50 blind passages were given, however, cytopathic effects were evident at 15<sup>th</sup> passage. The cell supernatants from every fifth passage were stored on FTA QIA Card and were shipped to Uppsala Sweden for genetic analysis. The B5R gene was amplified by specific primers and analyzed at both nucleotide and amino acid levels. Phylogenetic analysis indicated that Pakistani strains of buffalo poxvirus were clustered with previously characterized human poxvirus from Pakistan and buffalo poxvirus from India. However, over several passages, three consistent mutations were observed (I2K, N64D and K111E). The genetic relatedness of the human and buffalo poxviruses indicated that the zoonotic aspect of these viruses should not be overlooked especially in close human-livestock interface. Further studies are required to underpin the specific function of these substitutions and their role in switching hosts species.

### Biography

Mohsan Ullah has completed his M.phil in Microbiology in 2010 from the University of Agriculture Faisalabad, Pakistan and graduated in Veterinary Medicine from the same University. He is currently doing Master in infection biology at Uppsala University, Sweden. He had 1 publication in good reputed journal and doing master thesis at Uppsala University, Sweden.

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