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Localization of Bovine herpesvirus 1 DNA polymerase processivity factor UL42 and its catalytic subunit UL30

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Bovine Herpes Virus 1 (BoHV-1) is an important pathogen of cattle and buffalo, it leads to significant economic losses to the dairy and beef industry. BoHV-1 DNA replication takes place in the nucleus of infected cells. The process is mediated by a number of proteins, including a virus-encoded DNA polymerase holoenzyme complex, which consists of the catalytic subunit pUL30 and its processivity factor pUL42. In this study, we characterized the UL30 and UL42 proteins of BoHV-1 in transfected cells. A bioinformatics analysis identified a putative classical Nuclear Localization Signal (NLS) located at the C-terminus of pUL42 (residues 379-378), but no similar signals where identified on pUL30. To confirm this, differently tagged UL42 and UL30 fusion proteins had been expressed in MDBK cells. The co-immunoprecipitation and immunofluorescence experiments had been performed. The Co-immunoprecipitation of differently tagged UL42 and UL30 fusion proteins demonstrated that both proteins interact with each other even in the absence of other viral proteins. Importantly, when individually expressed in the absence of other viral proteins, pUL42 localized to the cell nucleus, whereas pUL30 was retained in the cytoplasm. Upon co-expression both proteins had been localized in the nucleus. Overall our results are consistent with the hypothesis that during BoHV-1 infection UL42 transports the catalytic subunit into the nucleus, similarly to what reported for other Herpes *viridae* members.

Biography

Sohail Raza is working as an Assistant Professor, Department of Microbiology, UVAS Lahore. He is also serving as Institutional Bio-safety officer of the university. During PhD, he has worked on the construction of gene deleted marker vaccine against Bovine Herpesvirus 1 and mechanism involve in the viral maturation and egress. Due to his contribution in this area, he has been awarded as the Distinguished Research Scholar Award, Excellent Research Contribution Award and Outstanding Research Thesis Award from government of China. He has published 07 papers in impact factor International Journals. His research focuses on the development of recombinant vaccines using trans-disciplinary approaches against prevalent diseases in Pakistan.

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