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Scenario of immunodiagnostics for animal herpes viruses

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Bovine Herpesvirus Type-1 (BHV-1), aetiological agent of a number of diseases including IBR, infectious pustular vulvovaginitis (IPV), infectious balanoposthitis (IBP), conjunctivitis, encephalomyelitis, mastitis, abortion, enteritis and interdigital lesions of domestic and wild cattle. Knowledge of genomic sequence of the virus, virus-specified components and their concerted action are helpful in predicting and defining the chain of events during the lytic and latent phases of the BHV-1 and determining the strategies through which bovine Herpes viral life cycle can be interrupted. Investigating herpes viruses would surely reveal most useful targets for formulating ways of diagnosis, prevention and antiviral treatment against herpes viruses. Following infection, BoHV-1 may persist in infected animals in a latent state in sensory neurons, e.g., in the trigeminal or sacral ganglia. Rapid and precise diagnosis plays a pivotal role in implementing suitable control measures in natural field cases of bovine abortion due to infection with BHV-1. The diagnosis of BoHV-1 associated abortions is commonly made through the observation of gross and histopathological lesions in fetal and placental tissues, by the detection of viral antigen by fluorescent antibody test (FAT), immunohistochemistry (IHC), or viral DNA by nested PCR and real-time PCR, multiplex real-time PCR for differentiation of field and vaccine virus strain. After virus isolation virus can be detected in cell culture by virus isolation, serology, histopathology, immunohistochemistry (IHC) and real-time polymerase chain reaction (PCR). Other diagnostic applications include strain characterization by restriction enzyme fragment length polymorphism (RFLP) analysis, antibody detection by neutralization test and ELISA, differentiating antibody analyses by gB blocking ELISAs, indirect ELISAs and gE-blocking-ELISAs. To deepen the dialogue between the authorities, the health and medical/veterinary care system, the academic sphere and industry must act altogether by establishing a "Task Force" at authority level for well-timed diagnosis and henceforth prevention of herpes viral infections.

Biography

Sharad Kumar Yadav has 25 years of teaching and research experience and has served to various senior positions of the University including Registrar of the Veterinary University, Mathura, India. He is currently the Director at Cow Research Institute and Professor and Head of Department of Veterinary Microbiology at Veterinary University, India. He has published number of papers in reputed international & national journals and has a vast experience in the arena of BHV-I virus research.

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