

April 22-23, 2019  
Athens, GreeceYehuda Stram, Arch Clin Microbiol 2019, Volume:10  
DOI: 10.4172/1989-8436-C1-017

# THE IMPORTANCE OF LUMPY SKIN DISEASE VIRUS LSDV126 GENE IN CATTLE VACCINATION, INFECTIONS, DIFFERENTIAL DIAGNOSIS AND EPIDEMIOLOGY

**Yehuda Stram**

Kimron Veterinary Institute, Israel

**O**ccasional onset of lumpy skin disease (LSD) in animals vaccinated with the live attenuated Neethling vaccine led to development of test assays that can distinguish between virulent field viruses and safe vaccine strains. These tests were based on the LSDV126 gene lacking a 27-bp fragment that is only found in field viruses. Several appropriate assays were developed, based solely on available local isolates from Israel, but the analysis of many field samples suggested that the assays were universal. Phylogenetic analysis of a 532-bp segment carrying the LSDV126 gene, and whole virus genome sequences, including those isolated from diseased animals vaccinated with Neethling vaccine virus, revealed that LSD viruses fall into two groups: virulent and vaccine viruses. Moreover, it seems that the Capripox viruses (sheeppox, goatpox and LSD Neethling vaccine viruses) that have a reduced or no ability to infect cattle carry only one copy of the 27-bp fragment. This strongly suggests that this portion of the LSDV126 gene has an important role for the infection of cattle. In silico analysis of potential antigenic regions revealed that an LSDV126 gene with only one copy of the dimer SVYDLPPND lacks a potentially important antigenic epitope, compared to the virulent field viruses, supporting the possible significance of the SVYDLPPND dimer for the infection of cattle.

## Biography

Yehuda Stram is currently retired and was the Head of the Molecular Virology Unit in the Kimron Israeli Veterinary Institute. He got his BSc in the Tel Aviv University in Biology, MSc in the Microbiology Department of the Tel Aviv University specialized in bacteriophage replication. He received his PhD in the Molecular Virology Department of the Hebrew University Medical School. He did his Postdoc in the Hoffmann la Roche Cell Biology Institute and in the Plant pathology Department of the University of Kentucky. He earned in 1994 and 2015, the Kimron Award as the Scientist of the Year for veterinary sciences in Israel. His research focuses on designing ways to control the spreading of Arboviruses such as LSDV and Simbu viruses by using RNAi approaches as well as designing and creating recombinant attenuated viruses suitable to be used as vaccine strains.

yehudastram@gmail.com