Online journal ISSN - 1676-5680
GMR Genetics and Molecular Research
EVOLUTION AND TECHNOLOGY

# Simultaneous presence of bovine papillomavirus and bovine leukemia virus in different bovine tissues: *in situ* hybridization and cytogenetic analysis

**A. Yaguiu[1], M.L.Z. Dagli[3], E.H. Birgel Jr.[4], B.C.A. Alves Reis[5], O.P. Ferraz[1], E.M. Pituco[6], A.C. Freitas[2], W. Beçak[1,2] and R.C. Stocco[1]**

[1]Laboratório de Genética, Instituto Butantan, São Paulo, SP, Brasil
[2]Departamento de Genética, UFPE, Recife, PE, Brasil
[3]Departamento de Patologia, FMVZ-USP, São Paulo, SP, Brasil
[4]Departamento de Clínica Médica, FMVZ-USP, São Paulo, SP, Brasil
[5]Departamento de Imunologia, ICB-USP, São Paulo, SP, Brasil
[6]Laboratório de Viroses de Bovídeos, Instituto Biológico, São Paulo, SP, Brasil

Corresponding author: R.C. Stocco
E-mail: ritastocco@yahoo.com or ritastocco@butantan.gov.br

Genet. Mol. Res. 7 (2): 487-497 (2008)
Received March 31, 2008
Accepted May 12, 2008
Published June 10, 2008

**ABSTRACT.** Bovine papillomavirus (BPV) DNA sequences were detected in different tissues, in addition to epithelium. Cytogenetic abnormalities were observed in blood lymphocytes. The presence of more than one virus in a single tissue is a difficult aspect to evaluate, especially when the DNA sequences are detected in tissues that are not specifically targeted by the virus. BPV and bovine leukemia virus (BLV) are clastogenic, causing chromosome aberrations in peripheral blood lymphocytes. In the present study, we investigated the simultaneous presence of DNA sequences of both viruses and

 

the possibility of vertical transmission and compared the types of chromosome aberrations related to viral action. BPV 1, 2, and 4 DNA sequences were found in three females of the herd and in their offspring. BLV DNA sequences were not detected in their progeny. A newborn calf that was negative for BLV infection showed specific chromosome rearrangements possibly related to the effect of infection with BPV.

**Key words:** Bovine papillomavirus; Bovine leukemia virus; Chromosome aberrations; Virus co-infection

 