

DIRECT AND INDIRECT DETECTION OF BOVINE LEUKEMIA VIRUS INFECTION IN CATTLE

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Abstract. Sixty cows from a herd naturally infected with bovine leukemia virus (BLV) and 24 cows from a herd in which BLV infection has not been observed were tested for the presence of BLV infection by two indirect indicators, anti-BLV antibodies and lymphocytosis, and one direct indicator, BLV provirus expression in peripheral blood mononuclear cells (PBMC). Thirty three per cent (20/60) of the cattle were found seropositive by enzyme immunoassay (ELISA), and of these, 12 (20%) cows were found seropositive by agar gel immunodiffusion (AGID) as well as 10 (17%) cows were found proviruspositive by the polymerase chain reaction (PCR). Fifteen per cent (9/60) of the cattle had lymphocytosis. Two cows were found proviruspositive, while indices of all the other indicators of BLV infection were negative. These results suggest that, depending on the stage of the infection, the pathogenesis of BLV in cattle may involve fundamental differences in the host-viral relationship, including the number of cells infected or the number of copies of integrated provirus per cell, the regulation of the expression of viral antigens and the induction of the anti-viral immune response.

Keywords: BLV, provirus, antibody, AGID, ELISA, PCR.