



Patogenicidade e vacinologia de amostras brasileiras de herpesvírus bovino tipo 1*

FERNANDO ROSADO SPILKI

Paulo Michel Roehe (Orientador – UFRGS/CPVDF)

Ana Cláudia Franco (Co-orientadora)

Banca: Cláudio Wageck Canal (UFRGS), Eduardo Furtado Flores (UFSM), Telmo Vidor (UFPel)

O herpesvírus bovino tipo 1 (BHV-1) está amplamente disseminado no rebanho bovino brasileiro. Visando aprofundar o conhecimento sobre a patogenicidade para o trato respiratório de amostras dos subtipos deste vírus mais freqüentemente encontrados no Brasil (BHV-1.1 e BHV-1.a), isolados autóctones oriundos de casos de doença respiratória foram inoculados em bovinos suscetíveis. As amostras de ambos os subtipos foram capazes de induzir doença respiratória após inoculação pela via intranasal, em intensidade que variou de moderada a grave, independentemente do subtipo de vírus inoculado. Foi ainda caracterizada a resposta imune humoral induzida por tais amostras quanto ao perfil de classes e subclasses de imunoglobulinas, sendo esta igualmente indistinguível com relação aos vírus inoculados. O perfil de classes de imunoglobulinas apresentadas pelos animais permitiu a determinação do status da infecção nos animais inoculados através da análise da resposta sorológica. Na segunda etapa deste trabalho foram testadas as propriedades vacinais de um vírus recombinante, do qual foi deletada a glicoproteína E (gE; 265gE-), gerado a partir de uma amostra brasileira de BHV-1.2a. Experimentos de inoculação do recombinante 265gE- em animais suscetíveis e o desafio destes animais com a amostra parental virulenta demonstraram a segurança e eficácia desta amostra na prevenção de sinais clínicos da infecção pelo BHV-1. Posteriormente, o recombinante 265gE- foi inoculado em vacas em diferentes estágios da gestação. Não foram observadas quaisquer anormalidades nestas gestações e as 22 vacas vacinadas deram à luz a animais saudáveis. Conclui-se que o recombinante é imunogênico e capaz de conferir significativa proteção frente ao desafio com a amostra parental virulenta do vírus. O recombinante também não causou enfermidade nas vacas inoculadas nem tampouco aos fetos quando inoculado em diferentes estágios da gestação.

Descritores: herpesvírus bovino tipo 1, BHV-1, rinotraqueíte infecciosa bovina, inoculações experimentais, vacina diferencial, bovinos.



Pathogenicity and vaccinology of brazilian strains of bovine herpesvirus type 1**

FERNANDO ROSADO SPILKI

Paulo Michel Roehle (Adviser - UFRGS/CPVDF)

Ana Cláudia Franco (Co-Adviser)

Committee: Cláudio Wageck Canal (UFRGS), Eduardo Furtado Flores (UFSM), Telmo Vidor (UFPel)

Bovine herpesvirus type 1 infections are disseminated among Brazilian herds. Aiming a better understanding of the pathogenicity of the most common viral subtypes present in Brazil (BHV-1.1 and BHV-1.2a), field isolates from cases of respiratory disease of both subtypes were inoculated into susceptible calves. Both were capable of inducing similar clinical illness in calves. The intensity of the observed clinical signs on the respiratory tract varied from mild to severe. However, there was no correlation with severity of disease and the viral subtype inoculated. The class and subclass profiles of the humoral immune responses induced by each of these strains were also characterized. No significant differences were detected on the immune response in respect to the virus subtype inoculated. The analysis of the patterns of immune responses allowed the determination of the approximate stage of infection the infected animals were undergoing. On the second part of this work, some of the properties of a glycoprotein E (gE) deleted recombinant virus (265gE-), constructed from a Brazilian BHV-1.2a autochthonous isolate, were examined in order to determine its potential as a vaccine virus. Susceptible calves were inoculated with the recombinant and subsequently challenged with the wild type parental virus. No clinical signs were observed after the inoculation with the 265gE-; after challenge with the virulent wild type strain, minimal clinical signs and reduced viral excretion was observed. The safety of the recombinant for pregnant cows was also investigated. After inoculation of the recombinant strain, 22 cows were observed for abnormalities until the terminus of pregnancy. All inoculated cows gave birth to normal calves. It was concluded that the recombinant virus is immunogenic and capable of conferring significant protection against challenge with the virulent parental virus. Moreover, within the conditions of the present study, when inoculated in cows at different stages of gestation the recombinant did not cause disease in the cows nor was it pathogenic for their foetuses.

Key words: bovine herpesvirus type 1, BHV-1, infectious bovine rhinotracheitis, experimental infection, differential vaccine, bovine.

Presented: 14 January 2004

** Master's Thesis no. 367 (Field: Virology).112 p. Graduate Program in Veterinary Sciences, Faculdade de Veterinária - UFRGS. CORRESPONDENCE: F.R. Spilki [fernandospilki@yahoo.com.br].