GMR Genetics and Molecular Research
Online Journal
ISSN:1676-5680

Differential expression of genes during mastitis in Holstein-Zebu crossbreed dairy cows

I. Fonseca[1], G.R. Antunes[2], D.S. Paiva[2], C.C. Lange[3], S.E.F. Guimarães[1] and M.F. Martins[3]

[1]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, MG, Brasil
[2]Faculdade de Farmácia, Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brasil
[3]Embrapa Gado de Leite, Juiz de Fora, MG, Brasil

Corresponding author: M.F. Martins
E-mail: mmartins@cnpgl.embrapa.br

Genet. Mol. Res. 10 (3): 1295-1303 (2011)
Received October 8, 2010
Accepted December 12, 2010
Published July 5, 2011
DOI 10.4238/vol10-3gmr1096

ABSTRACT. Among the potential public health problems of animal production, infectious-contagious diseases stand out. Mastitis is among the main diseases affecting dairy cattle. One of the most promising options to reduce the problems caused by this disease, besides proper sanitary and management practices, is selective breeding of resistant animals. To shed light on the immune response mechanisms involved in the resistance/susceptibility phenotype to this disease, we quantified the relative expression of the genes *IL-2*, *IL-6*, *IL-8*, *IL-12*, *IFN-γ*, *TNF-α*, *TLR-2*, *SEMA5A*, and *FEZL* in cells of crossbreed dairy cows, divided into two groups, one healthy and the other suffering from clinical mastitis. Total RNA was extracted from the cells in the milk from the animals in each group (with and without clinical mastitis). Gene expression was determined using the real-time PCR method. The levels of gene expression were compared, and the cows with mastitis were found to express 2.5

 ©FUNPEC-RP www.funpecrp.com.br

times more *TLR-2* than those free of mastitis ($P < 0.05$). There were no significant differences in the expression of the other genes.

Key words: Immune response; Real-time PCR; Resistance to mastitis; Toll-like receptor 2 gene

 ©FUNPEC-RP www.funpecrp.com.br