

What Cytokines are Expressed on Abomasum Lymph Nodes when Somalis Crossbreed Sheep are Infected by *Haemonchus contortus* in Northeast of Brazil?

L. Giotto Zaros¹; A. M. do Carmo Navarro²; M. R. Moreira das Neves²; C. L. Benvenuti²; L. Lehmann Coutinho³; L. H. Sider⁴; L. da Silva Vieira⁴

¹Universidade Federal do Rio Grande do Norte UFRN, Natal, RN, Brazil; ²Universidade Estadual Vale do Acaraú UVA, Sobral, CE, Brazil; ³Universidade de São Paulo USP/ESALQ, Piracicaba, SP, Brazil; ⁴Embrapa Caprinos e Ovinos, Sobral, CE, Brazil.

Cytokines play an important role in response to gastrointestinal nematodes infections and the knowledge about its expression is one way to infer how the host is responding to parasite. The present study evaluated the expression of cytokines IL-4 (interleukin-4), IL-13 (interleukin-13), TNF- α (tumoral necrosis factor) and IFN- γ (interferon) in Somalis crossbreed sheep resistant and susceptible to *Haemonchus contortus* infection in northeast of Brazil. From a Somalis sheep herd, 75 young animals were kept together on pasture without anthelmintic treatment for 4 months. The eight most resistant and the eight most susceptible animals were chosen based on the mean of fecal egg counts and slaughtered for recover the parasites and abomasum lymph nodes tissue samples collection. RT-PCR was performed using the LightCycler PCR and SYBR Green I dye. RPL-0 (ribosomal protein L-0) was used for normalization and the relative quantification of genes was calculated by REST software. Resistant animals had 9 fold less *Haemonchus contortus* than susceptible ($P < 0.05$). IL-13 was up-regulated in resistant animals (3.6 fold; $P < 0.05$) and IFN- γ was up-regulated in susceptible one (2.7 fold; $P < 0.02$). The other two genes analyze had the same expression pattern in both groups ($P > 0.05$). IL-13 is a cytokine that stimulates the T_H2 response, leading the host to quickly and efficiently respond to the infection, contributing to parasite expulsion. On the other hand, IFN- γ activates a T_H1-type response that has been observed in susceptible animals. It can be inferred that in resistant animals a T_H2-type response was activated and in susceptible animals this response was characterized by T_H1-type response. Study funded by FUNCAP, CNPq and Embrapa Caprinos e Ovinos.
