

Characterization of the cattle rob (1;29) centromeric heterochromatin by restriction endonuclease digestion and *in situ* hybridization with a cattle satellite I probe

R. Chaves, J.S. Heslop-Harrison, F. Adegá, Henrique Guedes-Pinto

Department of Genetic and Biotechnology, University of Trás-os-Montes and Alto Douro, Quinta dos Prados, P-5000, Vila Real, Portugal

Robertsonian translocations are the most common abnormalities in cattle (Gustavsson 1974). They have been the most common chromosomal rearrangements involved in the karyotype evolution of Bovidae (Iannuzzi et al. 1990). Of all the centric fusions discovered so far in cattle rob(1;29) has been found to be the most wide-spread, and show high frequency in Portuguese cattle breed-Barrosa (Rangel-Figueiredo and Iannuzzi 1990). In this study we used two barrosa animals, one homozygous and the other heterozygous to this translocation. To best characterize the distribution of bovine centromeric heterochromatin on this robertsonian chromosome, rob(1;29), we subjected the metaphases of these animals to banding using HaeIII, MspI and HinfI restriction enzymes. The banded metaphases were also submitted to sequential C-banding. Fluorescence *in situ* hybridization (FISH) with a probe representing cattle satellite I was also used to best characterized this translocation. This probe label the centromeres of all autosomes, but not X and Y chromosomes. We found that this specific centromeric sequences are apparently lost during the translocation process as we don't have fluorescence signals on the translocated chromosomes of the homozygous or heterozygous metaphases animals.

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References

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