Cytogenetic characterization of an hybrid goat-sheep by GTG-banding

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In mammals interspecies hybridization occurs rarely under natural conditions. Sheep (*Ovis aries*, 2n=54) and goats (*Capra hircus*, 2n=60) are genetically different and do not readily interbreed, although information of such interspecies matings exists. Cytogenetic incompatibility is one of the causes of embryo death due to incorrect chromosome paring during the zygote formation and/or aneuploidy occurrence during the zygote division. In this study we report a preliminary cytogenetic characterization of an healthy female hybrid goat-sheep born in a flock under natural conditions.
Peripheral blood sample cultures were performed to get normal lymphocyte cell cultures. After the fixation, a part of the obtained metaphases was stained with a 5% Giemsa solution, whereas a part was treated with 0.05% of trypsin solution and Giemsa staining to obtain the GTG-banding. Conventional and G-banded karyotypes were arranged respectively.
All cells that were observed showed an intermediate karyotype between sheep and goat with 57 chromosomes in total. The G-banding karyotype revealed the presence of 3 metacentric and 54 acrocentric chromosomes. The autosomes involved in the hybrid combination were CHI1,3, CHI2,8 and CHI5,11 corresponding to the metacentric chromosomes OAR1, OAR2 and OAR3. The sex chromosomes were correctly arranged and no further morphological differences were evidenced by classical cytogenetic investigation. Further molecular cytogenetic and genetic analysis are in progress to clarify the recombination events occurred in this rare interspecies hybrid.