

# Nanos2 Goats | CLATS

## Nanos2 Goats

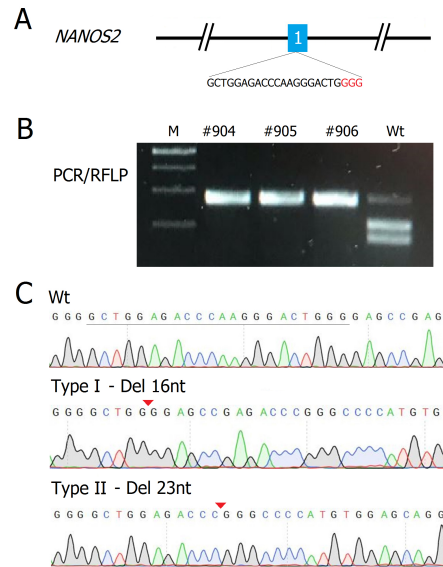


The NANOS2 gene has been knocked out in male goats using CRISPR/Cas9 and SCNT techniques

### Backgrounds

The NANOS2 gene, encoding an RNA binding protein, plays a critical role in the development of germline. The male mice with biallelic NANOS2 knockout (KO) are sterile due to apoptosis of prospermatogonia but with morphologically intact seminiferous tubules. The choice of NANOS2 for targeting could be a viable strategy to develop germline ablated males that serve as recipients for exogenous spermatogonial stem cell transplantation. The goat is a potential model of human physiology and an agriculturally important species. We have successfully generated NANOS2 KO male goats using CRISPR/Cas9 and SCNT techniques. Figure 1. Identification of NANOS2 KO goats. A. Schematic outline of the sgRNA specific to goat NANOS2 gene. Letters in red are the protospacer adjacent motif (PAM); B. Identification of NANOS2-KO cloned goats by PCR/RFLP assay. The PCR products can not be cut due to CRISPR/Cas9-mediated biallelic mutations in targeting sites. C. Identification of mutations in NANOS2 by Sanger sequencing. The sequencing results show two types (16nt and 23nt) of deletions in two alleles of cloned goats. The arrowheads indicate the positions of mutations in targeting loci.

Figure 1.



**Figure 1. Identification of NANOS2 KO goats.** A. Schematic outline of the sgRNA specific to goat NANOS2 gene. Letters in red are the protospacer adjacent motif (PAM); B. Identification of NANOS2-KO cloned goats by PCR/RFLP assay. The PCR products can not be cut due to CRISPR/Cas9-mediated biallelic mutations in targeting sites. C. Identification of mutations in NANOS2 by Sanger sequencing. The sequencing results show two types (16nt and 23nt) of deletions in two alleles of cloned goats. The arrowheads indicate the positions of mutations in targeting loci.

### CONTACTS