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Germ Cell Apoptosis in the Testis of Transgenic Pigs

Hak-Jae Chung, Bong-Ki Kim, Yeoung-Gyu Ko, Jei-Hyun Woo, Jeom-Soon Kim ,
Jin-Kwan Jung and Won-Kyong Chang

Animal Biotechnology Division, National Livestock Research Institute,
Rural Development Administration, Suwon, Korea

- PURPOSE** : Gene expression and apoptosis in testicular germ cells has been demonstrated in many transgenic animals. However, little is known about the transgenic pig and rates of apoptosis during spermatogenesis.
- METHODS** : Morphological and biochemical features of apoptosis reported in other species were used to confirm that the TdT-mediated dUTP Nick end labeling (TUNEL) assay is an acceptable method for identification and quantification of apoptotic transgenic germ cells in histological tissue sections from transgenic pig testis.
- RESULTS** : Seminiferous tubules from 4 transgenic pig with normal testis size and semen quality were evaluated by stage of seminiferous epithelium to determine the transgenic germ cell types and stages where apoptosis most commonly occurs. Sertoli cells were the most common germ cell type labeled by the TUNEL assay. A low rate of sertoli cells were labeled by the TUNEL assay.
- CONCLUSION** : Establishment of the basal level of transgenic germ cell apoptosis is a critical step towards understanding fertility and the role of apoptosis in regulating transgenic germ cell numbers during spermatogenesis.

Key words: *Transgenic pig, testis, Apoptosis, Sertoli cells, TUNEL*