Histochemical Studies on the Testis of Adult Bakerwali Goat (*Capra hircus*)

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ABSTRACT

The present study was conducted to localize various histochemical moieties in the testis of adult Bakerwali goats which revealed moderately diffused reaction for glycogen particles in the capsule. The spermatogenic cells and the cytoplasm of the Sertoli cells revealed weak to moderate reactions. The basement membrane and the lining epithelium of the tubuli recti and rete testis showed mild and moderate reactions to glycogen, respectively. The spermatogenic cells of the seminiferous tubules and the Sertoli cells were Feulgen reactive. The ovoid or spherical nuclei of the lining cells of the tubuli recti and rete testis revealed mild to moderate Feulgen reaction.

Key words: Bakerwali goat, Histochemistry, Testis

The sexual ability of a mature male is dependent upon the capacity of the testis which is the main organ of male reproductive system. Seminiferous tubules are sites of spermatogenesis in mammals including ruminants. Leydig cells of the testis produce testosterone which is responsible for male sexuality and secondary male sex characteristics (Hafez, 2000). However, there is paucity of literature on the testis of Bakerwali goat and hence the present study was conducted on the histochemistry of the testis.

The present study conducted on 25 pairs of testes of adult Bakerwali goat were collected from local abattoirs in and around Jammu. Tissue pieces from different parts of the testis viz. cranial, middle and caudal parts were fixed in 10 per cent neutral buffered formalin and processed for paraffin sections (Luna, 1968) by alcohol-xylene method. Sections of 5 μ thickness were stained by Best’s Carmine method for glycogen and Feulgen reaction for nucleic acids.

Basement membrane of the seminiferous tubules was moderately reactive to glycogen in all the goats under study. In contrast, weak reactivity of the basement membrane to glycogen was reported in buffalo calves (Goyal and Dhingra, 1973), Black Bengal goats (Pyne and Sinha, 1989) and adult Assam goats (Sarma, 2009). Comparatively more glycogen in the Bakerwali goats could provide a better nutrition to the spermatogenic as well as Sertoli cells of the seminiferous tubules. The connective tissue stroma of the capsule and trabeculae of the testes showed weak to moderate reaction for glycogen in Bakerwali goat (Fig. 1). The wall of the blood vessels of the trabeculae also showed strong reaction for glycogen (Fig. 2). The connective tissue fibres of the testes of buffalo calves (Chandra Pal and Bharadwaj, 1984) and adult Assam goats (Sarma, 2009) also exhibited mild to moderate reactions for glycogen. The sustentacular or Sertoli cells showed a very weak reaction as reported in goats (Dhingra, 1980). Goyal and Dhingra (1973) reported that the Sertoli cells completely lacked glycogen materials in the testis of buffalo. The variation in the reactivity of the Sertoli cells to glycogen might be due to breed or species variations.

Leydig cells showed moderate reaction for glycogen in the testes of adult Bakerwali goats as reported earlier by Karmore *et al.* (2001) in the testis of goat. On the contrary, Goyal and Dhingra (1973) reported that the Leydig cells completely lacked glycogen material in buffalo. In this study, the basement membrane of the tubuli recti and rete testis exhibited a weak reaction.

The capsule and septulae testes showed a negative reaction for nucleic acids. The nuclei of various
spermatogenic cells were Feulgen positive (Fig. 3) as reported in buffalo (Chandra Pal and Bharadwaj, 1984) and goat (Kakade and Singh, 1990). However, Sarma (2009) reported mild Feulgen reaction in the capsule and septulae testis of adult Assam goats. Similarly, Leydig cells of the testes showed a mild to moderate Feulgen reaction as reported in goats (Bordoloi, 1979; Sarma, 2009).

REFERENCES


