

of transformation by means of enzymatic techniques of organ dissociation and subsequent transplantation of cell suspension into an ectopic site. For a few years we have been studying the harderian gland of CBA mouse as a potential model system of epithelial carcinogenesis. The organ is localized behind the eyeball of the animals that possess the nictitating membrane. Our observations on the ultrastructure of the gland are well in agreement with those made by Watanabe¹. In fact we observe three cell types: myoepithelial, A and B secretory cells. Myoepithelial cells are located between the secretory cell base and the basement membrane. They are characterized essentially by the presence of cytoplasmic myofilaments, and are supposed to participate in the release of glandular secretion by contraction with a mechanism similar to one of mammary gland. Secretory cells A, with vacuoles apparently empty, are more numerous and have larger mitochondria than B cells. On the contrary, vacuoles of B cells contain a densely stained material, and sometimes they seem to coalesce. It is likely that A and B cells are involved in the secretion of lipids and pigment, respectively. After gland dissociation we have been able to find A and B cells well preserved. They show all the morphological characteristics above mentioned in cells observed *in situ*. Myoepithelial cells are absent in the scored sections: this can be ascribed to the relative paucity of this cellular type. At present we cannot exclude that the adopted enzymatic procedure has selected preferentially these cells. We are setting up a special technique to elucidate this point. Cellular suspensions have been tested *in vivo* for their capacity to proliferate in the interscapular fat pad of syngeneic hosts in short-term experiments. On the basis of evidence accumulated so far, a carcinogenesis experiment has been recently set up.

1. M. Watanabe, J. Morphol. 163 (1980) 349-65.

PRELIMINARY OBSERVATIONS ON THE ULTRASTRUCTURE OF THE BOWMAN'S GLANDS IN PODARCIS SICULA CAMPESTRIS DE BETTA (REPTILIA, LACERTIDAE)

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The positivity to PAS reaction, the lack of metachromasia and alcianophilia sustain the absence of acid mucopolysaccharides in the secretory products of the Bowman's glands in Podarcis sicula campestris. The Richardson's staining method shows equal staining of the granules in either alveolar or tubular portions.

The uniformity of the cellular population observed by light microscopy is confirmed on the electron micrographs. The cell membrane is provided with apical microvilli, scattered short expansions in the lateral surfaces, desmosomes and junctional complexes; its basal portion is placed on a well defined basal lamina. The nucleus is euchromatic and the cytoplasm contains bundles of tonofilaments. Though the cells show the same basic features, they differ from each other with respect to cytoplasmic density, widespread occurrence of the rough endoplasmic reticulum, number and size of the secretory granules. The granules have contents which differ in appearance with and without a thick rim or cap of denser material.

The secretory cells of the Bowman's glands in Podarcis sicula campestris can be considered as the serous bright cells of the same glands in Mammalian; cellular elements equivalent to the mucous dark cells of the Mammalian Bowman's glands were not found.

ULTRASTRUCTURAL STUDY OF THE EXTERNAL NASAL GLAND IN PODARCIS SICULA CAMPESTRIS DE BETTA (REPTILIA, LACERTIDAE)

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The external nasal gland in Podarcis sicula campestris is of the ramified tubulo-alveolar type as in all Squamata. By light microscopy and electron microscopy two different segments can be easily distinguished in the gland tubules: the proximal tract, formed by "striated cells", without a specific distribution of the secretory product, and the distal duct in which secretory cells are intercalated among "striated cells" which become progressively more numerous towards the proximal tract.

The nucleus of the secretory cells is endowed in the basal portion and contains diffuse chromatin and a promi-

nent nucleolus. The cytoplasm is vacuolated, exhibits a low PAS-positivity and a weak Alcianophilia in the apical region. In EM the perinuclear region is occupied by poorly developed granular endoplasmic reticulum and a few mitochondria. The large secretory droplets have low electron-density and appear packed in the apical cytoplasm.

The "striated cells" are characterized by elaborate lateral surfaces with interdigitating processes connected by several desmosomes. The cytoplasm exhibits numerous large mitochondria with a rather electron-dense matrix and cristae packed in close array. The granular endoplasmic reticulum is poorly represented and the secretory droplets are scanty. According to the different electron-density of the cytoplasmic matrix, the "striated cells" are distinguished in "bright" and "dark" cells.

The present observations confirm the classical cytological findings of the "striated cells" in *Squamata* and underline their unusual and prominent occurrence in *Podarcis sicula campestris*, where the external nasal gland does not seem to play any role in the osmotic regulation.

MONKEY SERTOLI CELLS "IN VITRO". A MORPHOLOGICAL, KARYOLOGICAL AND BIOCHEMICAL STUDY

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Sertoli Cells obtained from the testes of adult monkey (*Macaca fascicularis*) were studied. After seven days of incubation at 37°C in Eagle's basal medium containing 10% fetal calf serum, the cells were removed and subcultured in the same medium.

The cultured Sertoli cells were removed and morphologically studied in pellets or directly on monolayers. The cytoplasm contained numerous dark lipid bodies and produced numerous and elongated projections. Degenerating germ cells were engulfed in large phagosomes. Indented nuclei, similar to those observed in the Sertoli cells in vivo,

were visible. Hypertrophic nucleoli were visible in the euchromatic nuclei. It was also observed that several cells were undergoing mitosis.

Biochemically the cells were characterized by high levels of lactate and estradiol 17 β production (20 μ g/ml of medium).

The energy metabolism, both oxygen consumption and lactate production, was not affected by lonidamine which inhibits respiration in germ cells and aerobic glycolysis in cells rich in mitochondrially-bound hexokinase¹.

Karyological analysis demonstrated both diploid and tetraploid metaphases. Patterns of nuclear scission were also evidenced.

1. Floridi et al., JNCI 66 (1981) 497.

FREEZE FRACTURE ANALYSIS OF SURFACE ACTIVITIES IN SERTOLI CELLS CULTURED IN VITRO

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Sertoli cells have been shown to synthesize and secrete numerous proteins under normal regulation by FSH and/or testosterone¹. Sertoli cells, on the other hand, contribute to the formation of a peculiar microenvironment, in which germ cell differentiation occurs, by both their secretory activity and the maintenance of extended occluding junctions forming the so-called blood-tubular barrier². It is interesting to recall that typical secretory granules have not been observed in Sertoli cells when studied at the electron microscopy level. Data are not available on the cytoplasmic and membrane mechanism which allow Sertoli cells to secrete products in the tubular lumen. Due to the complexity of the seminiferous epithelium, Sertoli cell cultures have been the most used experimental model for the study of Sertoli cell functions. We have performed a freeze fracture analysis of these cultures to characterize the intercellular membrane relationships and the surface events related to secretion. Our studies show that Sertoli cells are joined in vitro by numerous gap junctions which have features similar to those observed