

SUBMICROSCOPIC STRUCTURE OF THE SURFACE EPITHELIUM OF ALBUGINEA SEGMENT OF OVIDUCT IN QUAILS AND GUINEA FOWLS

KOT T. F.

Ultramicroscopic research method of the surface epithelium of protein segment of oviduct in quails and guinea fowls, found three cell types.

Cells of the first type are secretory. Granules of secretion densely fill core cytoplasm of these cells, resulting in apical pole extending above the surface of epithelium. Secretory granules have a rounded shape, containing heterogeneous material consisting of two fractions. The first homogeneous fraction that forms the bulk of secretions, has low electron density. A grid of thin fibrils of greater electron density represents the second fraction. Some secretory granules contain 1-3 electron-density areas. Apical poles of secretory epithelial cells contain microvilli, which do not form a rim. Organelles of general purpose (ribosomes, endoplasmic reticulum, Golgi apparatus, mitochondria) located mainly in the core cytoplasm zone, with sharp contours and typical structure. The nuclei are of irregular shape and their contours are uneven. Heterochromatin distribution is even in the nucleoplasm and the inner surface of the nuclear envelope.

Cells of the second type are ciliate. Their apical poles contain cilia. Within each cilia is an axial thread called Axoneme and a Basal body in its base. Axoneme has a form of cylinder, wall of which is formed by nine doublets of microtubules, and the center by a doublet of microtubules. Nine microtubule triplets placed in parallel form Basal body. Cross-striated radix goes deep into the cytoplasm from the Basal body with basal leg at the side. The cytoplasm of ciliated cells has a lower electron density than in secretory cells. It contains secretory granules of irregular shape with electron-dense content. The nuclei are of irregular shape and their contours are uneven. Chromatin distribution over nucleoplasm is even and presents heterochromatin condensed on the periphery and euchromatin non-condensed in the center. Golgi complex is rare and represented mostly by densely placed cisterns and a small amount of transport vesicles. Mitochondria have different size, oval form and distinct membranes. Short channels, ribosomes and polysomes present endoplasmic reticulum.

Cells of the third type are basal. They have triangular shapes and small, irregular contours. Their cytoplasm forms short spines. The nuclei are of irregular shape, with uneven contours and contain 1-2 nucleoli. Perinuclear cisterna sometimes extended. Heterochromatin localizes predominantly on the inner surface of the inner membrane shell of the nucleus. Organelles in the cytoplasm are rare.

Intercellular connections in the epithelial layer of protein segment of oviduct represent different types of connection: gear, dense, sealing and desmosome. The last connection prevails between secretory and ciliated cells. At this connection, microfibrilles fill intercellular gap, penetrate the cortical layer through cell membrane of the cytoplasm of adjacent cells, and connect with attachment plates.

The features of epithelial cells of albuginea segment of oviduct in clinically healthy birds shall be used as parameters of norm when diagnosing diseases of various origins and in experimental studies.

Quails, guinea fowls, oviduct, albuginea segment, epithelial cells, comparative cytology.