



Comparative Structural Organization of Skin in Red-Tail Shark (Epalzeorhynchos Bicolor) and Guppy (Poecilia Reticulata)

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Abstract:

The cellular organization of the skin of two ornamental fish; red-tail shark (*Epalzeorhynchos bicolor*) and guppy (*Poecilia reticulata*) were studied by light microscope as well as scanning electron microscope. The skin of the two species was composed of epidermis, dermis and hypodermis, although the epidermis showed great variations in their components in the two species. The epidermis of red-tail shark consisted of epidermal cells, mucous goblet cells, serous goblet cells, club cells, rodlet cells and melanocytes. While, the epidermis of guppy was composed of epidermal cells, mucous goblet cells, eosinophilic granular cells, lymphocytes and melanocytes. The skin of red-tail shark included a variety of sense organs as tuberosus receptor organs in the head, superficial neuro masts on the lower lips and the head, canal neuromast in the operculum and the head, and taste buds on the lips, operculum, dorsum of the head and lateral regions of the trunk. However, the skin of guppy was characterized by presence of ampullary organ on the dorsal side of the head, superficial neuromasts on the lips and the head, canal neuromast in the operculum and the head, and taste buds on the operculum, dorsum of the head and trunk regions. These structural peculiarities with histochemical features indicate additional physiological role of the skin of the two species, as the mucous goblet cells in the two species contained a considerable amount of glycoconjugates, whereas the other unicellular gland types, the serous goblet cells and club cells in red tail shark were proteinous in nature. The dermis and hypodermis was composed of connective tissue, mainly collagenous fibers. Scanning electron microscopy indicated presence of fingerprint like- patterns of microridges of the epidermal cells, pores for lateral canal system, openings of mucous cells and taste buds with specific sensory organs in each fish species.

Keywords:

Epidermis; Guppy; Red tail shark; Scanning electron microscopy; Histochemistry; Lateral line system

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