Original article

UDC: 616.5-003.875
doi:10.5633/amm.2018.0118

LIGHT-MICROSCOPIC AND MORPHOMETRIC PROPERTIES OF ARGYROPHILIC NUCLEOLAR ORGANIZING REGIONS IN DEEP EPIDERMAL RIDGES OF HUMAN THICK SKIN

Aleksandar Petrović[1], Vladimir Petrović[1], Dragan Jovanović[2], Aleksandra Antović[3], Miroslav Milić[3], Hristina Kocić[2]

[1]University of Nis, Faculty of Medicine, Department of Histology and Embryology, Niš, Serbia
[2]University of Nis, Faculty of Medicine, Department of Dermato-Venereology, Niš, Serbia
[3]University of Nis, Faculty of Medicine, Department of Forensic Medicine, Niš, Serbia

Contact: Aleksandar Petrović
Blvd. dr Zorana Djindjica 81, 18000 Niš, Srbija
E-mail: aleksandar.petrovic@medfak.ni.ac.rs

The epidermis of the thick skin on the flexor sides of hands and feet has a very complex superficial relief, known as dermatoglyphics, constantly maintained by precise, spatially coordinated regeneration and differentiation, whose potential lies within the deeper epidermal parts – rete ridges. One of the proliferative markers, AgNORs, represents neucleolar organizing regions, that after histochemical staining with silver ions can be observed as black dots in the nucleus. The aim of this study was to estimate morphometric properties of AgNORs in different micro-topographical compartments of thick skin epidermis, such as deep intermediate and limiting epidermal ridges. Necropsy samples of thick skin were taken from the tips of big toes of fifteen cadavers, and routinely processed to paraffinized microtome sections, which were stained with hematoxylin-eosin, and silver-based method for staining nucleolar organizing regions. Morphometric analysis was performed separately on basal keratinocytes of intermediate and limiting epidermal ridges. Suprabasal layer of tips, as well as basal layer of intermediate ridge sides, as a sign of higher proliferative status, showed a higher number of silver-stained nucleolar organizer regions with small average values of the area. According to AgNORs morphology, proliferation was sporadically and diffusely present in basal, as well as in suprabasal layer of tips, and sides of limiting ridges.

Acta Medica Medianae 2018;57(1):122-130.

Key words: *Silver Staining, Nucleolus Organizer Region, Epidermis, Computer-Assisted Image Analysis*