ORT_35 - Ultrastructural cell morphology in human cervical carcinoma cells lines: SiHa and HeLa

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Introduction: Papillomaviruses constitutes a family of epitheliotropic and mucosotropic closed circular double- stranded DNA genome. There are several phenotype of antigen-presenting cells (Langerhans cell, Migratory LC, Langerin dendritic-cell populations, dermal macrophages) in the skin which are migratory in the epithelial tissue. There are different cellular markers in the skin and skin-draining lymph nodes in mice and humans. Dendritic cells stimulant $CD4^+$ T cells, $CD8^+$ lymphocytes, natural killer (NK) that act as receptors similar to the toll like receptors (TLRS).

Objectives: The present study reports the presence of the virus like particles (VLP) and describe ultrastructural cell morphology in samples of the bovine papillomavirus (BPV) virus-like particles (VLP). Moreover, demonstrated morphological alterations inside the SiHa and HeLa cell lines ($3x10^6$ cells) described by electron microscopy in previously PCR positive samples. Few studies have assessed the transmission electron microscopy in different cells lines.

Methodology: For ultrastructural analysis, the specimens (warts and SiHa and HeLa cells) were embedded in epoxy resin, fixed in 1% glutaraldehyde and post-fixed in 1% osmium tetroxide. Later steps followed by washes in cacodylate buffer 0.2 M in sodium sucrose 0.7% and distilled water.

Results: Many activated mitochondria. Vesicle transport well preserved and active core. Very rER indicating high cellular activity. Presence of intranuclear virus like virus like particles (VLP), mitochondria, keratin, many ribosomes and cellular junctions like desmosomes. High cellular activity producing keratin.

Conclusion: These results described expression of genes and the role of proteins involved in DNA damage repair pathways in primary human keratinocytes (PHK) and HPV-positive (SiHa – HPV-16 and HeLa – HPV-18) and HPV-negative (C33A) human cervical carcinoma cells lines as also in immortalized keratinocytes cell line (HaCaT, not tumor control) as possible prognostic markers for cervical cancer.

Keywords: Cell line; HPV; Biomarkers