

Human epithelial cells

“Epithelium” refers to the tissue covering and lining the inner and outer surfaces of the body, hollow organs and glands. Epithelial cells can be arranged in a single (simple epithelium) or multiple layers (stratified epithelium). Based on their shape, epithelial cells can give rise to squamous, cuboidal, and columnar varieties.

Epithelial tissue has multiple functions: it protects other tissues from various insults, but also participates in secretion, absorption, excretion and diffusion of diverse substances necessary for homeostasis.

Researchers studying cellular function, transport, differentiation, transformation, toxicity, systems biology and cancer would greatly benefit from DV Biologics human epithelial cells, which are isolated from the esophagus and kidneys.

The esophagus is lined with epithelial cells, forming stratified squamous epithelium.

We supply human esophageal epithelial cells (EEC) (pD016-f) that exhibit a characteristic cobblestone appearance (Fig. 1A) when grown on precoated plates. If kept in culture for longer periods of time, they spontaneously differentiate into stratified, elongated cells (Fig. 1B)¹. The same phenomenon can be achieved by addition of Ca⁺ to the medium. DV Biologics normal human EECs could be passaged several times from its initial seeding. After a few passages, the population doublings were estimated to be 7.8 (Fig. 2). DV Biologics esophageal epithelial cells stain positive for cytokeratin 14 (CK-14), an intermediate filament protein known as a marker for squamous epithelium (Fig. 3). This product is

an excellent tool for studying esophageal epithelium, its transformation, as well as tissue engineering.

DV Biologics kidney epithelial cells (pU002-f) represent a mixed population of epithelial cells isolated from the entire kidney. The cells express cytokeratins (Fig. 4)² and provide a superb system for research involving hypertension, diabetes, oncology, renal fibrosis, autoimmune disease, drug screening/development and toxicology.

Stay tuned for new DV Biologics products-human whole intestine, small intestine and large intestine epithelial cells coming soon!

1. Sato, N. and Hitomi, J. (2002) *The Anatomical Record* 267: 60-69.
2. Lash, L.H. et al. (2001) *J Pharmacol Exp Ther* 296: 243-251

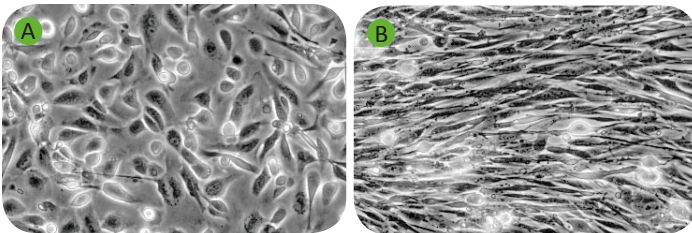


Fig 1: Primary culture of normal EECs. (A) Formation of EECs colony 72 hours post seeding (spread out as cobblestone-shaped cells). (B) Primary culture of normal human EECs after 5 days of culture. Notice remarkable change in morphology characterized by elongation of cytoplasm and stratification.

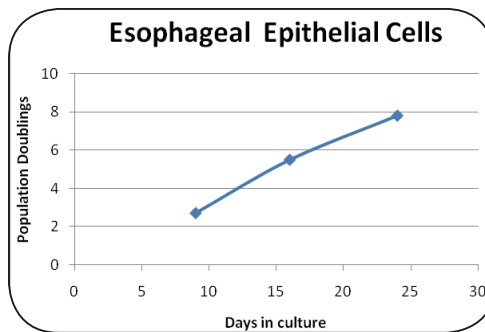


Fig 2: Graph of estimated population doublings for EECs. The total population doublings were 7.8.

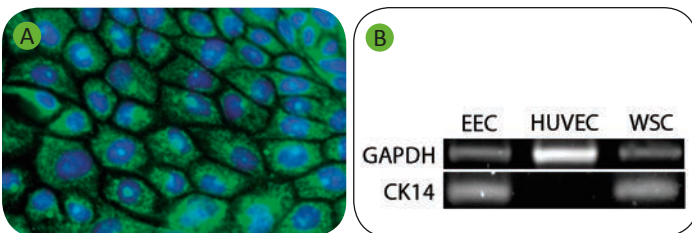


Fig 3. EECs express epithelium specific marker CK-14. (A) CK-14 expression in normal human EECs visualized (10X magnification) by immunofluorescent staining after 14 days of in vitro culture. CK-14 antibody are labeled green, nuclei are stained with DAPI (blue)(B) CK-14 and GAPDH RT-PCR performed on mRNA derived from normal human Epithelial Esophagus Cells (EECs), Human Umbilical Vein Endothelial Cells (HUVEC), and human whole skin tissue cDNA (WSC).

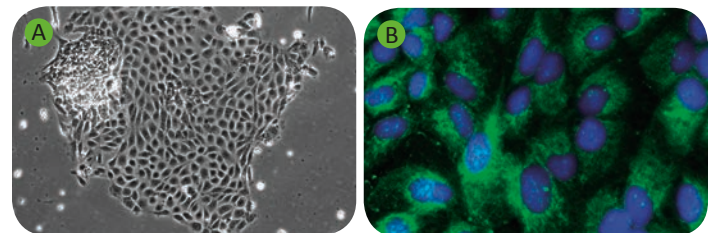


Fig 4. Characterization of DV Biologics kidney epithelial cells. (A) Kidney epithelial colony forming 16 hours after plating. (B) Cells were fixed and processed for immunofluorescence using CK-14 antibody (green). Nuclei are stained with DAPI (blue).



Ways To Place An Order

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