



WHAT'S NEW AT

dv

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Fall 2011

CELLutions
for Innovation™

newsletter

Human Small Intestine Epithelial Cells

Epithelial tissues line surfaces of structures and cavities throughout our body. Epithelial cells can be arranged in single (simple epithelium) or multiple layers (stratified epithelium). Based on their shape, epithelial cells can give rise to squamous, cuboidal, and columnar varieties. The lumen of the small intestine is lined with columnar epithelial cells.

Epithelial cells have various functions including secretion, selective absorption, protection, excretion and diffusion of diverse substances necessary for homeostasis. Researchers studying cellular functions, transport, differentiation, transformation, toxicity, systems biology and cancer would greatly benefit from DV Biologics human small intestine epithelial cells and related products.

DV Biologics supplies human small intestine epithelial cells (pD015-f) that exhibit a characteristic columnar appearance when grown on pre-coated plates (Fig. 1A). DV Biologics small intestine epithelial cells stain positive for cytokeratin 14 (CK-14), a marker indicative of epithelial cells (Fig. 1B). At the RNA level, both our human small intestine epithelial cells (pD015-f) and human whole small intestine cells (uncultured) (pD007-f) express markers CK-14 and Defensin (DEFA5) which is indicative of paneth cells located in the small intestines (Fig. 1C). DV Biologics small intestine epithelial cells may be passaged several times from their initial seeding. After a couple passages, the population doublings were estimated to be 4.8 with a doubling time of 65 hours (Fig. 2). Small intestine epithelial cells and related products (Table 1) are excellent tools for studying intestinal epithelium, its transformation, absorption, secretion, drug screening/development, toxicity, as well as tissue engineering¹⁻³.

Want to simplify your small intestine epithelial cell studies? Need controls, RNA, cDNA or media for growing small intestine epithelial cells? Check out our related products (Table 1). We are here to facilitate your research needs.

Stay tuned for exciting new developments of DV Biologics epithelial cell products coming soon!

1. Day (2006) *Curr Stem Cell Res Ther.* 1(1): 113-120.
2. Fagerholm (2007) *J Pharm Pharmacol.* 59(10): 1335-43.
3. Hayashi (2007) *Drug Metab Pharmacokinet.* 22(2): 67-77.

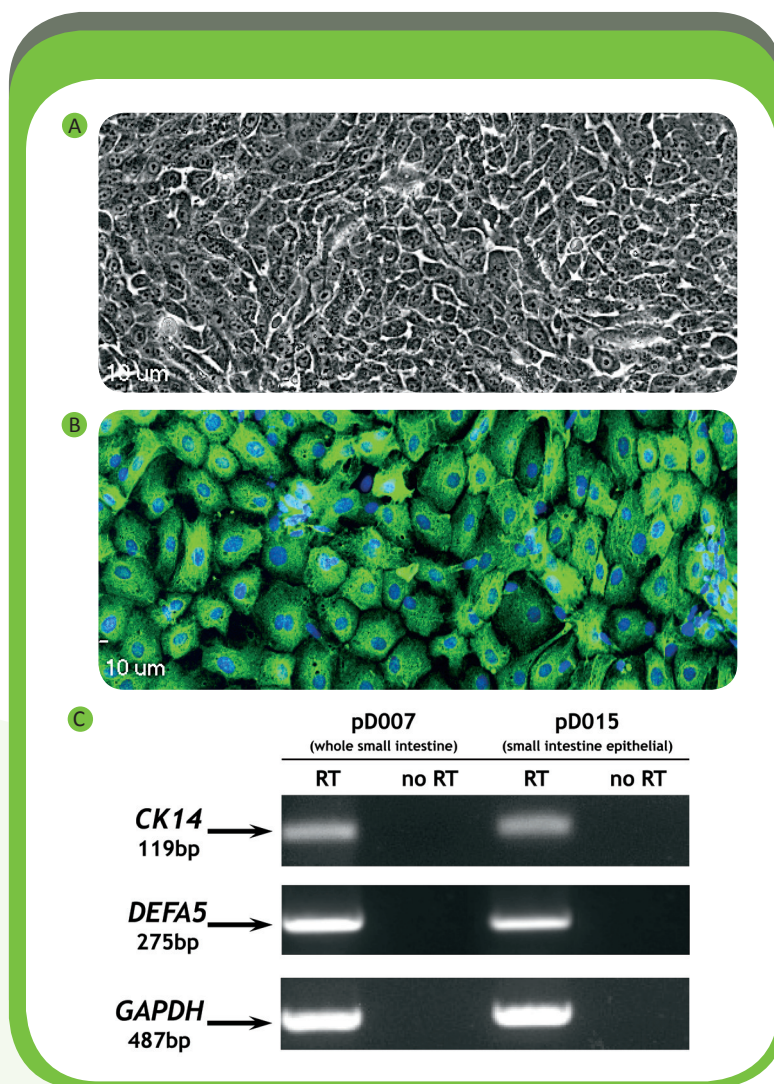


Figure 1. Purified human small intestine epithelial cells and derived molecular products. (A) Phase contrast picture of a large colony of small intestine epithelial cells shows columnar morphology following culture in Epithelial Pro-Conditioned Media (D-Pro-015) for 5 days. (B) CK-14 expression in normal human small intestine epithelial cells by immunofluorescent staining after 7 days of in vitro culture. Anti-CK-14 antibodies are green fluorescent; nuclei are stained with DAPI (blue). (C) cDNA is synthesized from whole small intestine RNA (pD007-r) and small intestine epithelial RNA (pD015-r) by reverse transcription with oligo-d(T), and amplified by PCR using primer pairs specific for Cytokeratin-14 (CK14), Defensin-alpha 5 (DEFA5), and GAPDH. Results show that whole small intestine cells (pD007-f) and small intestine epithelial cells (pD015-f) express Cytokeratin-14, Defensin, and GAPDH mRNA.

Figure 2. Graph of estimated population doublings after 14 days. Small intestine epithelial cells are seeded at $2 \times 10^5/cm^2$ in plasticware treated with coating solution (CCS102), in epithelial pro-conditioned medium (D-Pro-015), dissociated with cell dissociation solution (CCS101), and counted every 7 day-period. There are approximately 4.8 population doublings following 14 days in culture. Doubling time for small intestine epithelial cells is approximately 65 hours. Error bars denote $\pm 10\%$.

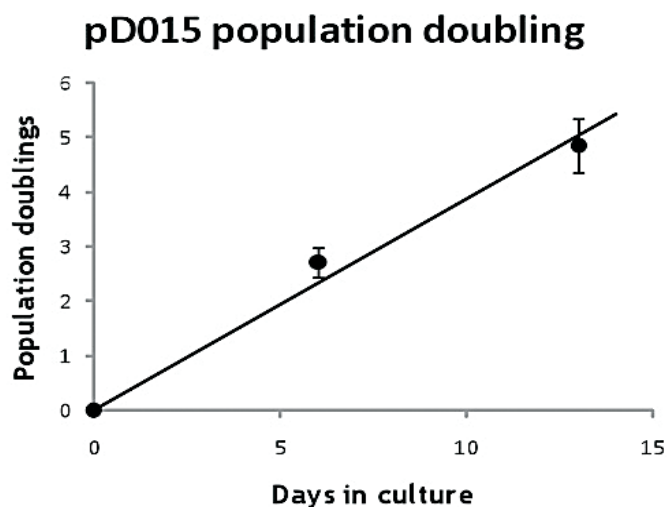


Table 1: Small intestine epithelial cells and related products.

Product	Unit size	SKU	Price
Human whole small intestine cells, prenatal	5.0×10^5	pD007-f	\$300.00
Human whole small intestine tissue lysate, prenatal	100 μ g	pD007-L	\$130.00
Human whole small intestine RNA, prenatal	10 μ g	pD007-r	\$40.00
Human whole small intestine cDNA, prenatal	20 reactions	pD007-cD	\$170.00
Human whole small intestine frozen tissue block, prenatal	1 block	pD007-fs	Call
Human small intestine epithelial cells, prenatal	5.0×10^5	pD015-f	\$700.00
Human small intestine epithelial cell pellet, prenatal	2.5×10^6	pD015-cp	\$700.00
Human small intestine epithelial cell RNA, prenatal	10 μ g	pD015-r	\$600.00
Human small intestine epithelial cell cDNA, prenatal	20 reactions	pD015-cD	\$550.00
Cell dissociation solution	20ml	CCS101	\$70.00
Culture vessel coating solution	10ml	CCS102	\$60.00
Epithelial Pro-Conditioned Media	100ml	D-Pro-015-100	\$185.00
Epithelial Pro-Conditioned Media	50ml	D-Pro-015-50	\$125.00
Epithelial Pro-Conditioned Media	25ml	D-Pro-015-25	\$75.00

Ways To Place An Order

Contact Us:

By phone 1.888.773.5959 (Toll Free North America)
By fax 1.877.773.5959 (Toll Free North America)
By email orders@dvbiologics.com

Ordering Hours:

Monday through Friday, 9:00 am - 5:00 pm Pacific Standard Time.
 Order anytime, 24 hours a day, 365 days a year by email or fax. If your order arrives outside our normal business hours, it will be quickly processed at the beginning of the next business day.

