



Primary Human Dermatological Cells

Relevant models of the skin

ATCC offers a targeted array of products for primary keratinocyte, melanocyte, and dermal fibroblast culture, including media and supplements that support serum-free cell culture conditions. These products have a wide number of applications that include studies on wound healing and toxicity/irritancy, response to UV radiation, skin diseases and trauma, and cosmetic research.

ATCC primary keratinocytes have been extensively tested by our research and development laboratory and confirmed to form skin equivalents that mimic the architectural features and behavior of normal skin cells such as (Figure 1)1,2.

- Filaggrin staining
- Stratified squamous epidermis
- Cornified layer
- Wound healing after scratch test
- Physiological inflammatory response
- Triton X-100-resistant structures

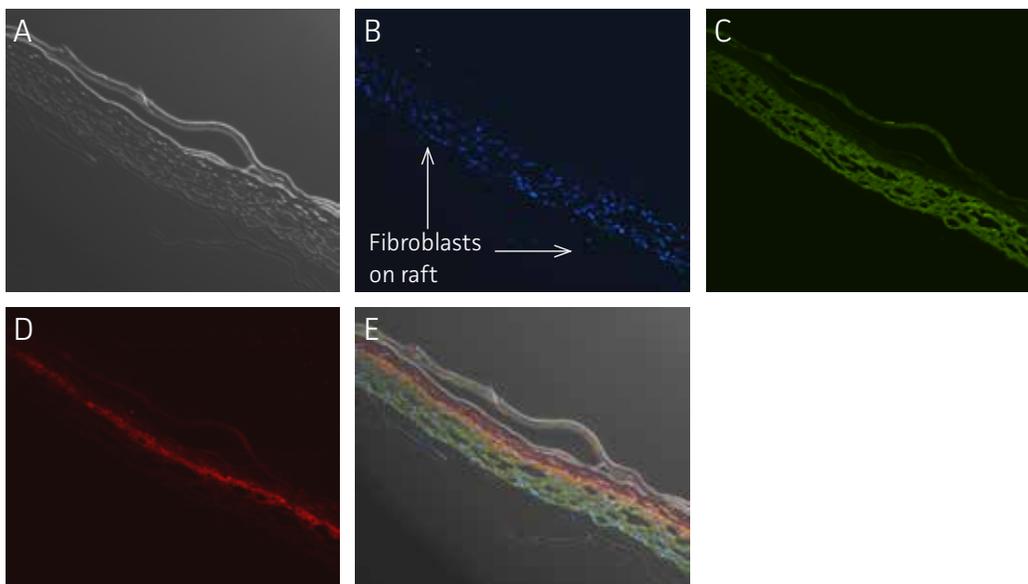
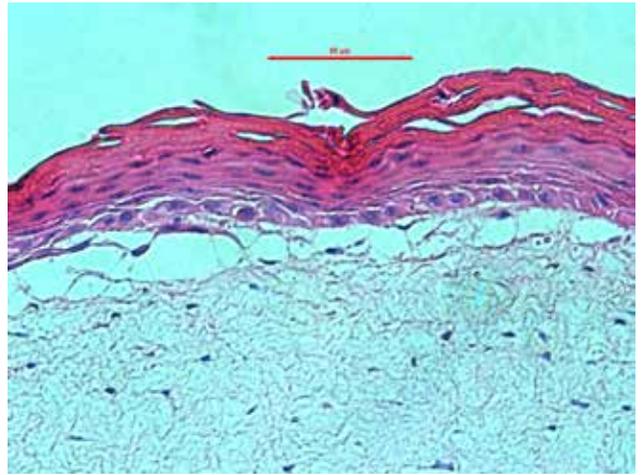


FIGURE 1. Micrograph of primary keratinocytes at 11 days post airlift. A) Phase contrast micrograph at 10x magnification. Panels B-E show keratinocytes stained with B) DAPI, or antibodies directed against C) KRT14, D) filaggrin, and E) overlay of all four channels.

Well characterized, high-performance primary cells

ATCC primary human dermatological cells are consistently isolated and processed, minimizing the variation between individual vials as well as production lots. Specification and characterization for each lot of dermatological cells includes:

- Provided at passage 2
- At least 5×10^5 viable cells per vial
- Capable of > 15 population doublings
- Tested positive and negative for cell-specific markers
- Exhibit > 70% post-thaw viability
- Normal cell morphology
- Gender, age, ethnicity, and cause of death information available
- Negative for bacteria, yeast, fungi, viruses, and mycoplasma



In vitro models of inflammation

In search of primary dermal cells that respond to injury like *in vivo* cells? Look no further. Primary keratinocytes (ATCC® PCS-200-010™) when subjected to scratch test, reepidermalized the area and secreted IL-8 corresponding to *in vivo* situation (Figure 2).

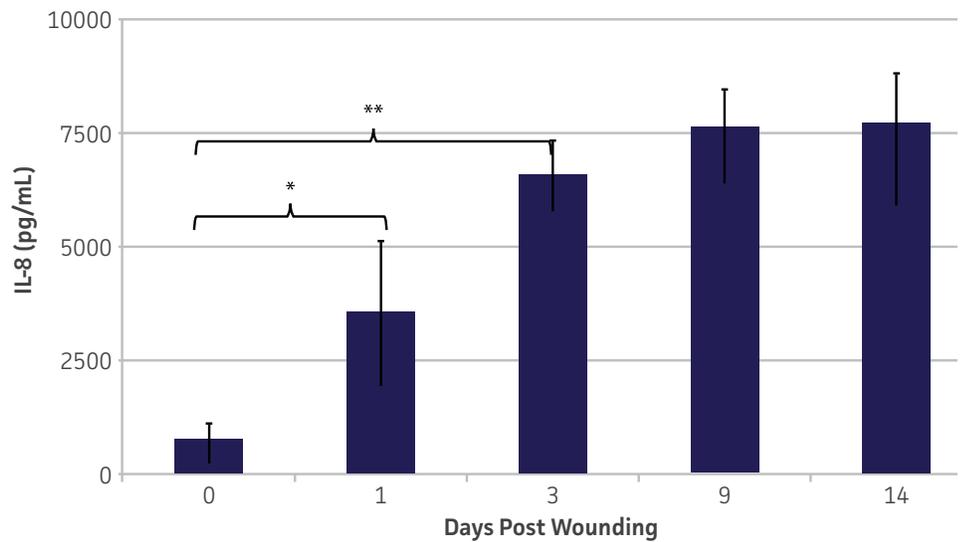


FIGURE 2. Primary keratinocytes provide an *in vitro* model of epidermal inflammation. IL-8 was analyzed before and after wounding using the Luminex™100 platform (n=3, *represents $p < 0.005$ vs day 0, ** represents $p < 0.00001$ vs day 0).

TABLE 1. Primary cells, supporting media, and growth kits

Cell Type	Product Name	ATCC® No.	Number of Cells/vial	Growth Kit	Basal Media
Keratinocytes	Epidermal Keratinocytes; Adult	PCS-200-011™	500,000	Keratinocyte Growth Kit (ATCC® No. PCS-200-040™)	Dermal Cell Basal Medium (ATCC® No. PCS-200-030™)
	Epidermal Keratinocytes; Neonatal Foreskin	PCS-200-010™	500,000		
Melanocytes	Epidermal Melanocytes; Adult	PCS-200-013™	500,000	Melanocyte Growth Kit (ATCC® No. PCS-200-041™)	Dermal Cell Basal Medium (ATCC® No. PCS-200-030™)
	Epidermal Melanocytes; Neonatal Foreskin	PCS-200-012™	500,000	Adult Melanocyte Growth Kit (ATCC® No. PCS-200-042™)	
Fibroblasts	Dermal Fibroblasts; Adult	PCS-201-012™	500,000	Fibroblast Growth Kit, Serum-free (ATCC® No. PCS-201-040™) or Fibroblast Growth Kit, Low Serum (ATCC® No. PCS-201-041™)	Fibroblast Basal Medium (ATCC® No. PCS-201-030™)
	Dermal Fibroblasts; Neonatal	PCS-201-010™	500,000		
	Dermal Fibroblasts; Neonatal, Mitomycin C-treated	PCS-201-011™	3 million		

References

1. Briley AB, Shapiro B. hTERT-immortalized and primary keratinocytes differentiate into epidermal structures in 3D organotypic culture. Application Note Number 14, 2016.
2. Briley AB, Zhang CK. Characterization of a 3D organotypic skin model using keratinocytes and mesenchymal stem cells immortalized by hTERT. Poster presentation at American Society for Cell Biology, 2014.

For ATCC Primary Human Skin Cells, as well as other skin cancer research resources,
explore www.atcc.org/skincancer.

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