

EPITEMTM

Reconstructed Human Skin Equivalent Model



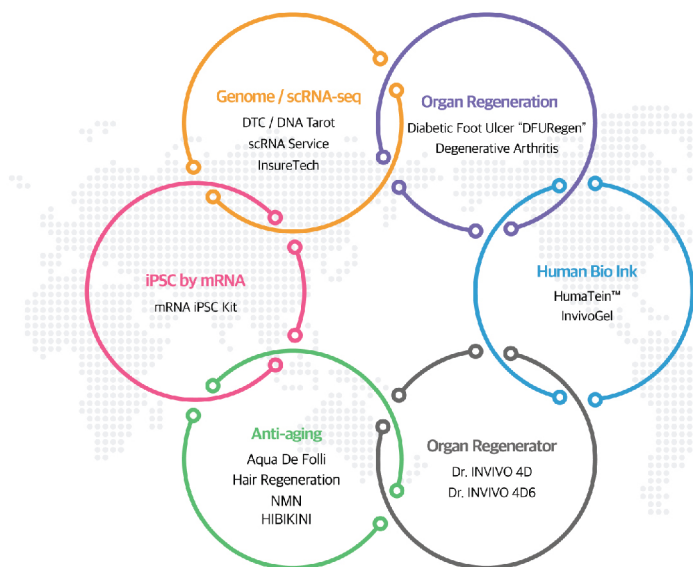
Skin For Your Research



ROKIT Healthcare is a global company committed to provide an effective autologous organ regeneration platform using its proprietary biofabrication technology across all types of applicable diseases in the field of regenerative medicine. Through a convergence of know-how's and innovation in the areas of R&D (i.e. 4D bioprinting, autologous stem cell treatments, and human cell derived biomaterials), surgical medicine, and regulatory affairs, ROKIT Healthcare believes that supplying customized organ regeneration platform services will drastically change the way we trust and manage the health of our own body.

Best Regenerative Solution

ROKIT Healthcare brings a revolutionary transition in bioprinting industry 'from bench to clinic' and we ask all researchers and physicians around the world to contribute in the field of regeneration technology. Please share 4D bioprinting medical platforms to improve the quality of life and provide innovative healthcare. Unite with us in the creative and life-saving strife.



"Aging Is A Disease"

Renovate and Expand the life expectancy with ROKIT's organ regeneration & healthcare platforms. We, ROKIT Healthcare, endeavor to change the world by providing the safest and effective organ regeneration services with our specialized expertise in regenerative medicine. Now is the moment for a new paradigm shift in the global healthcare economy. Therefore, we made ourselves as a pioneer to introduce new therapeutic methods utilizing autologous cells, cell sheet technology, and 4D biofabrication technology.

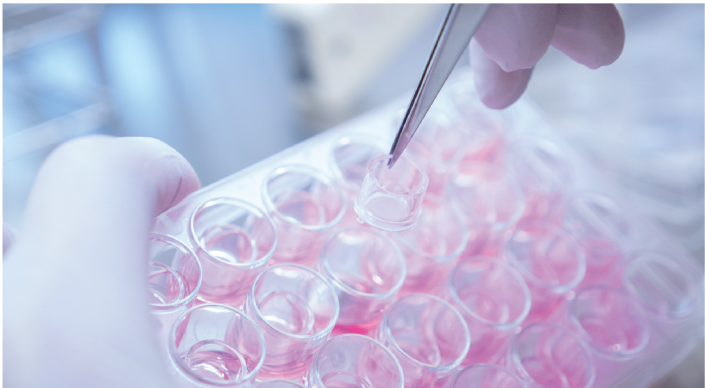
You, Seokhwan

Chairman/CEO

Y. Seokhwan

Reconstructed Human Skin Equivalent Model

Introducing ROKIT Healthcare’s all-in-one solution for the human skin on-demand. As a pioneer, we took the first step to provide on-demand services to the scientists and researchers, saving their precious time and reducing the experiment costs. Benefit from the validated human skin equivalent made with ROKIT Healthcare’s high precision technology of 4D biofabrication in the comfort of your bench.



Feature

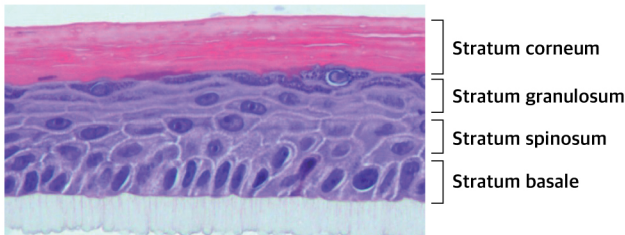


Fig 1. EpiTem had the multi-layered and highly differentiated epidermis.

Histological morphology is observed following H&E staining after 18 days of reconstruction and characterization of the localized proteins expression.

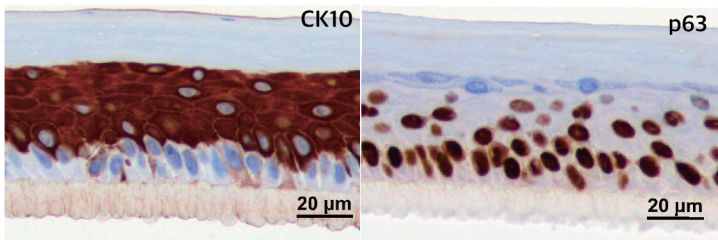


Fig 2. Immunohistochemistry results of (A) Cytokeratin10 and (B) p63.

IHC was performed by histological cross-sections of the EpiTem to characterize the localized expression of differentiation marker.

Barrier Function Test

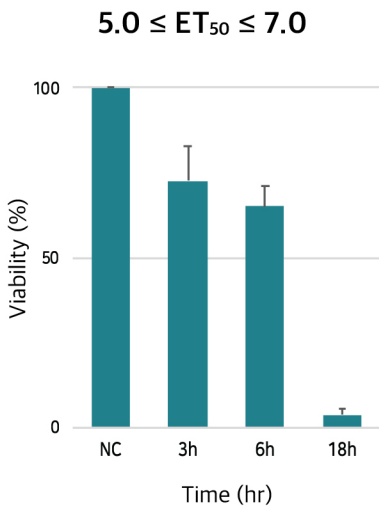


Fig 3. Barrier function result depends on time exposure.

ET_{50} corresponds to the time to observe 50% cell mortality after treatment of 1% Triton X-100 on EpiTem.

Irritation Test

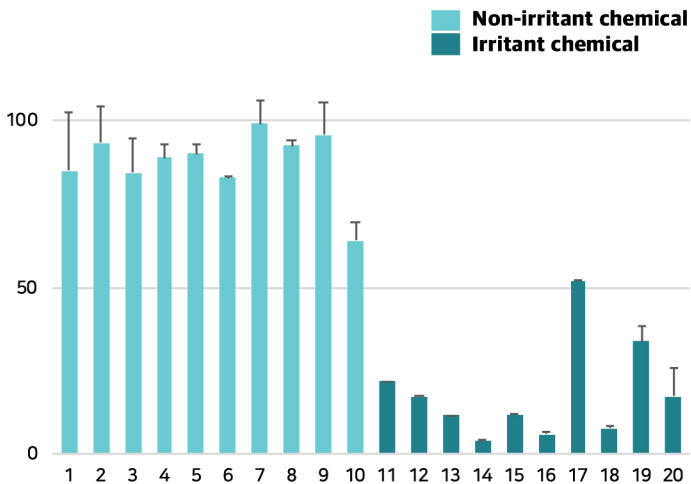


Fig 4. Irritation test results of 20 chemicals according to OECD TG439 guidelines.

Non-irritation chemicals show over than 50% cell viability, but classified chemicals represent less than 50% viability.

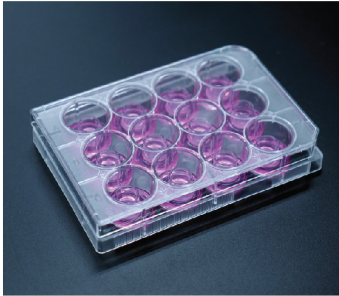
* ET_{50} – Exposure Time required to reduce cell viability by 50%



3D Bioprinting Human Skin Equivalent System

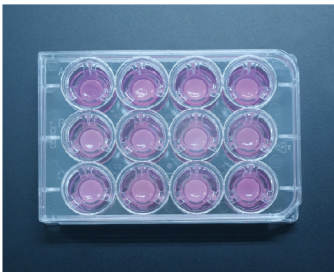
ROKIT's human skin equivalent model is a three-dimensional living cell epidermal & dermal system that printed by layering cells and biomaterials according to the native structure of skin.

1. EpiTem - Epidermis Human Skin Equivalent Model



EpiTem is reconstructed human epidermis model by culturing human keratinocytes on a chemically defined medium. EpiTem is highly differentiated, where all four epidermal layers can be clearly seen and qualifies the OECD TG439. As an alternative to animal testing, EpiTem can be used for testing cosmetic ingredients, pharmaceuticals and skin research testing.

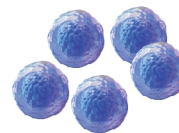
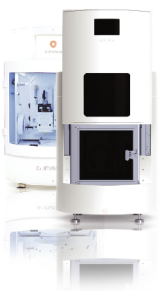
2. EpiTemFT - Full-thickness Human Skin Equivalent Model



EpiTem FT is a full-thickness human skin equivalent (HSE) produced by the 3D bioprinting technology. It recapitulates multi-layered dermis and epidermis of the human skin using human epidermal keratinocytes (NHEK) and neonatal dermal fibroblasts (NHDF). The standard EpiTem FT is contained in 12 mm-diameter culture inserts, but the well size can be customized.

Rokit's human skin model offers a cost-effective, on-demand way to test drugs and cosmetics on human tissues.

3. EpiTem Creator Kit



Dr. INVIVO 4D
or
Dr. INVIVO 4D6

Bioink

Medium

Cell

Protocol

EpiTem Kit provides a unique solution to build your own human skin equivalent in the controlled settings of your lab.

ON-DEMAND: Combine ROKIT Healthcare's bioprinter, bioinks, cells, media, and standardized protocol to create human skin tissues whenever you need them.

CUSTOMIZED: With the ability to control cell types (donor ethnicity, genetically modified cells, cancer, etc.) and tissue sizes, custom-made skin tissue assays that meet exact your research needs and budget.

REPEATABLE: Create quality tissue samples with reproducibility of the 3D bioprinting technology.

TE Class



Introducing the Rokit TE (Tissue Engineering) Class provided by ROKIT Healthcare.

In accordance with the company's philosophy of pursuing Organ Regeneration Platform, the ROKIT TE Class provides education for the user's easy accessibility of the ROKIT's Organ Regenerators (Dr. INVIVO 4D and Dr. INVIVO 4D6).

The ROKIT TE Class training content includes theories and practical training on basic concepts and applications for Bio-Inks, which are preparations for using the ROKIT's Organ Regenerators, and training on how to use the device to operate the Organ Regenerators.

In addition, you can learn about cell theory and cell cultivation methods, which are the basics of cell biology experiments, so that beginners can easily understand the fields of cell-biology.

In the ROKIT TE Class, theoretical training on EpiTem FT(Full Thickness), Human Skin Equivalent of ROKIT Healthcare, were added. You can learn the output protocol using Dr. INVIVO 4D.

ROKIT REFERENCES



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Publisher

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