COSMO BIO CO., LTD.
Inspiration for Life Science

ADM Scaffold **ADMATRIX®** Instructions for Use

Research Use

Cat#KBC-B19KRN001-EX

Product Description and Application

ADMATRIX® enables you to compose human skin models easily and handily.

ADMATRIX® is a highly bioactive ADM (Acellular Dermal Matrix) made from tissue of normal porcine skin, which has the most similar structure to that of human skin.

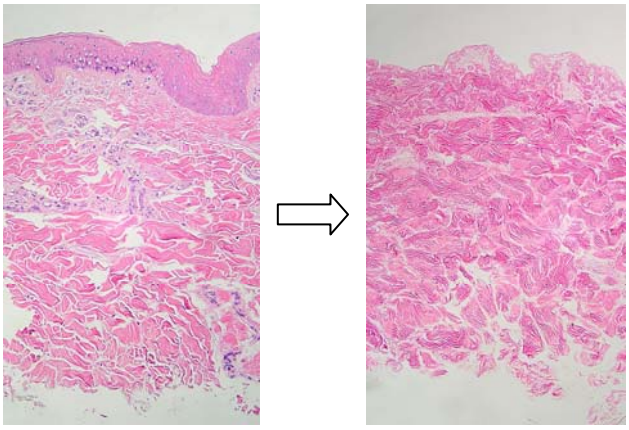

Fig.1 Porcine skin tissue- pre/post acellularization

(×100)

ADMATRIX® retains the basement membrane, with which higher attachment rate of epithelial cells is shown. Bearing the basement membrane, the structure of **ADMATRIX®** is very close to the biological matrix, and which allows you to conduct an in-vitro assay under a condition close to an invasion assay.

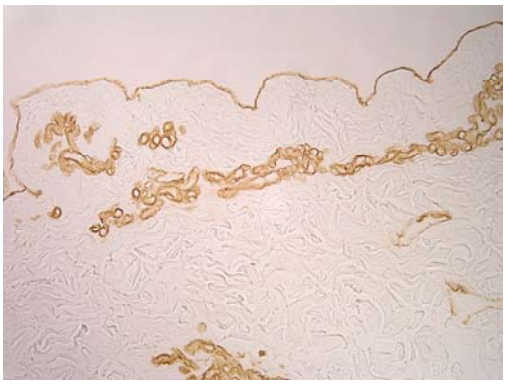

Fig.2 Type Ⅳ collagen, stained (×200)

Contents of the Product

A package of this product contains the following items.

- **ADMATRIX®**…6 packets (φ22mm, 1 piece/packet)
- Culture inserts…6 pieces
  (0.8μm pore size、for 6-well plate)
- Filter paper set…1 set (φ22mm, 10 sheets)

In a packet, **ADMATRIX®** is placed inside the culture inserts. All the items contained in a package are sterilized and individually wrapped.

Precautions for Use

i) The operating procedure introduced in the next section is an optimised process to compose human skin models. Results can be varied depending on actual cells and conditions adopted: Especially, culture medium, length of incubation, or density of cell seeding are the influential factors. Please optimise the conditions according to the cells and experimental systems of yours.

ii) Due to its in-vivo like structure, **ADMATRIX®** has a strong contractive tendency. This may cause a product become slightly smaller or greater than its designated size (Φ22mm, 0.6mm thick)

iii) It is hard to determine the front side from the back of **ADMATRIX®**. Please handle with care and attention.

iv) Please store **ADMATRIX®** in the original package at 4℃. DO NOT turn over the package or contents.

v) All the procedures must be done under aseptic conditions.

How to Use

1. Preparation of ADMATRIX®

(1) Take out the packets of necessary quantity from the storage kept at 4℃, and warm to room temperature.

(2) Open the packet in sterilized environment. Take out the internal container from the packet and open the top lid.

(3) Use sterilized forceps. Check the ADM is placed between sheets of filter paper in the culture insert. Place the culture insert containing ADM in a 6-well plate. ADM is originally set with the epidermal side up and the dermal side down in the culture insert. DO NOT unnecessarily turn ADM over. Once confused, it is hard to determine its front side from the back.

(4) **Culturing epithelial cells only**: remove only the top filter paper from ADM. The epidermal side (front side) of ADM with the basement membrane is to work as culturing base.

(5) **Mesenchyme cells only or culturing on both sides**: With filter papers kept attached on both sides, turn the ADM upside down in culture insert.

(6) After turning the ADM over, remove the filter paper on top to reveal the dermal side for cell culturing. When turning the ADM back over again, use supplied filter paper as a backing.

2. How to make human skin models

Three-dimensional cultured human skin equivalent with multi-layered epidermis can be composed with ADM used as its scaffold. →*See reference 2) - 4).* By using the both sides of ADM for culturing, multiple kinds of cells can be incorporated.

(1) Seed the keratinocyte suspension of target cell number onto the ADM surface (the basement membrane side) in culture insert. Use growth medium for keratinocyte and incubate at 37℃ and 5% of CO_2.

(2) When cells become confluent*, adjust the concentration of Ca in the medium at over 1.6mM. This induces differentiation of keratinocytes. (*Duration of incubation varies depending on concentration of cell suspension used)

(3) Expose epidermal surface to the air, and continue with air-liquid interface culture for another couple of days. This induces keratinocytes to become multi-layered and form the corneum layer.

Skin model sample (epidermis) composed with ADMATRIX®

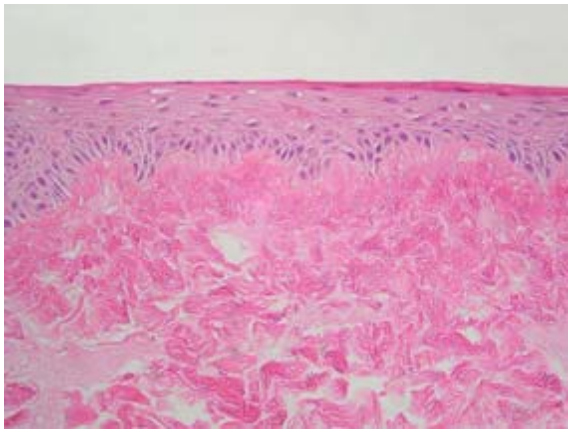

Fig. 3 Human keratinocytes (x 200)

Stability

Where stored at 4℃, **ADMATRIX®** will keep its stability for 6 months after the time of distribution.

Reference

1) Y. Takami et al. Burns 22:182-190(1996)
2) K. H. Chakrabarty et al. Br J Dermatol 141:811-823 (1999)
3) D. R. Ralston et al. Br J Dermatol 140:605-615 (1999)
4) T. Qian et al. Br J Plastic Surgery 56:260-265(2003)

CAUTIONS FOR STORAGE AND HANDLING

This product is for RESEARCH USE ONLY. DO NOT use this for any other purpose, such as for human consumption, cosmetic or domestic use.
Store this product at 4℃.

Product code: B19-KRN-001
Product license: PATPEND2003-430492,
PATPEND2004-24351
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