Reconstruction of Human Epidermis in Culture

Commonly used acronym: *RHE*

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Contact person

Yves Poumay

Organisation

Name of the organisation Université de Namur (UNamur)

Department NARILIS

Country Belgium

Geographical Area Walloon

SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Specify the type of cells/tissues/organs	Human epidermal keratinocytes

DESCRIPTION

Method keywords

skin

epidermis

Reconstructed human epidermis

cutaneous toxicology

epidermal irritation

epidermal infection

Scientific area keywords

skin biology

dermatology

Infection models

Method description

Method to culture human epidermal keratinocytes and seed them for tissue reconstruction at the air-liquid interface over a polycarbonate porous membrane.

Lab equipment

- Culture hood,

- Culture incubator,

- Refrigerated centrifuge,

- Volt-ohm meter,

- Inverted phase-contrast microscope.

Method status

Published in peer reviewed journal

PROS, CONS & FUTURE POTENTIAL

Advantages

- This method allows production of human epidermal organoids,

- Other cell types like melanocytes can be added to the reconstruction,

- It allows studies of epidermal barrier in normal and pathological conditions.

Challenges

There is no immune cell of the adaptative system in the model.

Modifications

This reconstruction can be performed over synthetic dermis.

Future & Other applications

The model is increasingly used to mimick epidermal pathologies, either inflammatory, infectious, or cancerous.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

Associated documents

Poumay2004-ADR296-203.pdf

De Vuyst 2014 Epidermal cells 191.pdf

Frankart2012-EXD21-871.pdf

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