Reconstruction of Human Epidermis in Culture

Commonly used acronym: *RHE*
Created on: 30-11-2023 - Last modified on: 19-12-2023

SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
This method makes use of	Human derived cells / tissues / organs
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

PARTNERS AND COLLABORATIONS

Organisation
Name of the organisation Université de Namur (UNamur)
Department NARILIS
Country Belgium
Geographical Area Walloon

Coordinated by

Financed by