3D Reconstructed Human Vaginal Epithelium

Commonly used acronym: *HVE*

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Contact person

Christel Boudry

Organisation

Name of the organisation straticell

Department straticell

Country Belgium

Geographical Area Walloon

SCOPE OF THE METHOD

The Method relates to	Human health: women's health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Used species	Human
Targeted organ system or type of research	vaginal epithelium

DESCRIPTION

Method keywords

preclinical safety and toxicology

3D Reconstructed Human Tissue model

inflammation

in vitro assay

Scientific area keywords

women's health

efficacy testing

3D in vitro models

feminie hygiene

Method description

Throughout a woman's life, the vaginal epithelium is subject to strong physiological variations which, combined with the use of external chemical molecules, can lead to intimate discomforts such as irritation, dryness and dysbiosis. The safety of these external agents, whether hygiene or skincare products, must therefore be demonstrated, in addition to objectification of their biological efficacy. Traditionally, these safety and efficacy tests were carried out on *ex vivo* rodent vaginal explants. Today, for obvious animal ethical reasons, these tests are more commonly performed on human vaginal cells in monolayer cell culture. However, these 2D models miss the differentiation and barrier properties of a living organ. Only 3D organoid reconstructions can approach the structure and functionality of living vaginal tissue. As a provider of *in vitro* dermo-cosmetic testing, StratiCELL achieved the reconstruction of 3D Human Vaginal Epithelium (HVE) from isolated vulvar epithelial cells. Cultured under controlled conditions on microporous supports and at the air/liquid interface, the team succeeded in reconstructing 3D tissue histologically similar to natural vaginal tissue.

Method status

Still in development

PROS, CONS & FUTURE POTENTIAL

Advantages

3D organoid reconstructions approach the structure and functionality of living tissues. They can be used for preclinical safety and efficacy testing.

Challenges

The reconstructed human vaginal epithelium does not secrete natural mucosa.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

Links

StratiCELL website

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