

3D Reconstructed Human Vaginal Epithelium

Commonly used acronym: HVE

Created on: 29-11-2024 - Last modified on: 02-12-2024

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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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