VitroScreenORA®
A Visionary Future of Human Health

HAIR FOLLICLE

Unique *in vitro* advanced Hair Follicle (HF) model to study hair cycling, anagen/catagen transition.

Compared to *in vivo* HF cycle, the model physiologically presents a transcriptional profile related to an active growth phase (anagen-like) up to 10 days.

The evolution of the model through the phases of HF cycle can be obtained by applying cycle modulators and pushing HF towards regression (catagen-like).

Vascularized HF a co-culture with human primary microvascular endothelial cells is developed as customized system.

GROWTH START

HAIR SHEDDING RESTING

Telogen RESTING

Catagen REGRESSION

Anagen GROWTH

GROWTH STOP INVOLUTION

Applications

○ To screen the activity of compounds on different phases of HF cycles (e.g. hair growth modulation by WNT pathway)
○ Mechanistic studies driving model evolution mimicking HF cell cycle and check points
○ Vascular system detoxifying activity
○ To investigate drug metabolism and side effects on HF and diseases modelling
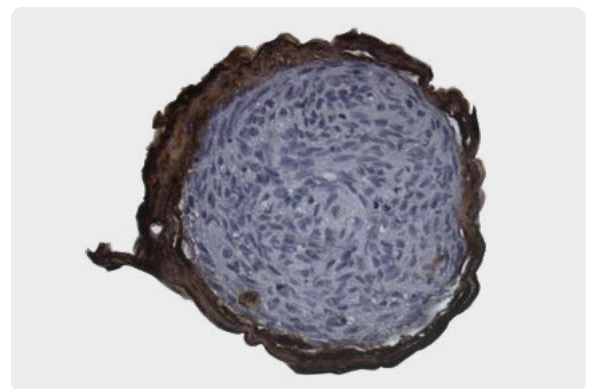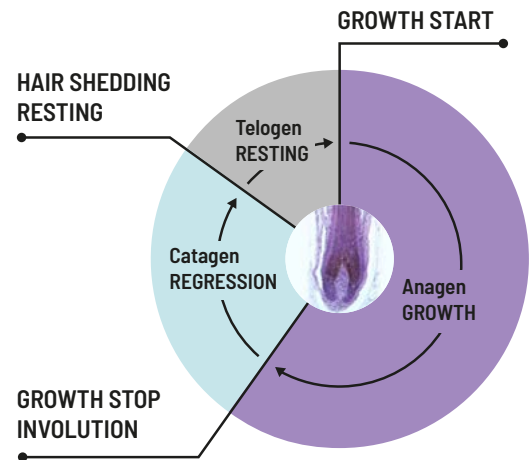
Cell source:
Human Hair Follicle Keratinocytes (outer layer) and Dermal Papilla Fibroblasts (inner core)

Shelf life:
up to 10-15 days

Relevance:
Gene expression profile related to growing hair follicle.
Expression of mesenchymal markers.

■ CK6 (HF Keratinocytes)
■ Hematoxylin (HF Dermal papilla)

Articles

Gianni Baratto, Elisa Caviola, Marisa Meloni, Nicola Lionetti, Adriana Bonfigli, Maurizio Sironi, Stefano Pieraccini, Marc Oliver, Luisa Coderch, Luigi Rigano
Hair Strengthening Evaluation of Anisotropic Osmolite Solutions (Inositol + Arginine): Cross Talk between Dermal Papilla Fibroblast and Keratinocytes of the Outer Root Sheath Using a μHair Follicle 3D Model
Cosmetics 2018, 5, 56 *https://doi.org/10.3390/cosmetics5040056*

Posters

M. Meloni, J. S. Craw, K. Rodan and K. Fields
A Regressive 3D Scaffold-free Micro Hair Follicle (μHF) to Assess FGF18 Peptide Mimetics
Poster WCD 2019, Milan

Gianni Baratto, Elisa Caviola, Marisa Meloni, Nicola Lionetti, Adriana Bonfigli, Maurizio Sironi, Stefano Pieraccini, Marc Oliver, Luisa Coderch, Luigi Rigano
Hair strengthening by anisotropic osmolite solutions (inositol + arginine): cross talk between dermal papilla fibroblast and keratinocytes of the outer root sheath by a "proto-follicle" 3D model
Poster IFSCC 2018, Munich

Elisa Caviola, Barbara De Servi and Marisa Meloni
Hair follicle bulb developed as 3D scaffold free microtissue: 3D HF -MTS
Poster SID 2017, Portland, Oregon (USA)