

Ex Vivo Testing

Efficacy tests using *ex vivo* human skin explants

European Cosmetic Regulation (EC 1223/2009) requires scientific evidence of efficacy for cosmetic products. *Ex vivo* living human skin explants allow the efficacy of a formulation, active ingredient or device to be assessed under conditions closest to reality, as skin explants have normal morphology, physiology, structure, barrier, and metabolism. This model is therefore responsive to treatment.

Various application modes are possible: topical (on skin surface), systemic (in medium), injection (intra-dermal or subcutaneous). Application can be single or chronic, and any physical form can be applied (cream, serum, liquid, solid, powder, oil-in-water, water-in-oil, patch, needles, injectable etc).

The *ex vivo* model allows many external stresses to be reproduced: exposure to light (UVA, UVB, IR, HEV) or pollution (urban, air, outdoor, indoor), chemical (SDS, allergens) or mechanical (stripping) aggression, temperature (high, low, humidity), wound, burn, sensitisation, hair removal, pathogenic bacteria, etc.

The *ex vivo* model helps you to understand and explain the mechanism of action that a product has on human skin.

Different *ex vivo* models

- Whole skin
- Epidermis + Dermis
- Separated stratum corneum
- Hypodermis
- Isolated hairs
- Scalp explants
- *Perfex vivo*
- Psoriasis-like
- AD-like
- Skin with cutaneous microbiota
- Inflamed skin

Advantages of *ex vivo* model

Eurofins has developed an *ex vivo* model of living human skin explants. A combination of specific methods and a unique culture medium allows explants of human skin to be kept in a viable state for up to two weeks. This model provides robust and reliable evidence of the biological effects of your cosmetic products or medical devices on human skin.

The *ex vivo* model enables us to:

- Work in conditions very close to the actual physiology of human skin
- Choose the phototype, age and gender of the skin donor
- Adapt experimental protocol to your particular project
- Rapidly observe the effects of your product on the skin ahead of *in vivo* studies
- Provide scientific proof of claimed effects of your product, illustrated with photographs

The model developed by Eurofins BIO-EC is ideal for tailor-made protocols. Thanks to the presence of skin appendages (i.e. hair follicles, glands), it is possible to assess effects on sebum regulation, hair loss, and hair greying.

Ex vivo efficacy tests

- Anti-ageing
- Skin microbiota
- Hydration / skin barrier
- Pigmentation / whitening
- Photoprotection
- Exfoliation
- Antibacterial
- Anti-pollution
- Anti-oxidant
- Anti-blue light
- Anti-glycation
- Skin tolerance
- Anti-inflammation
- Wound healing
- Slimming
- Hair growth
- Anti-acne / sebum regulation
- Skin irritation / sensitisation
- Autophagy
- Anti-dandruff
- Anti-adhesion



Cosmetics@eurofins.com



www.eurofins.com/cos



@ Eurofins Cosmetics & Personal Care



**Cosmetics &
Personal Care**

Global Expertise, Personal Touch