

StratiCELL and **Neuron Experts** (FR) join forces to develop a unique model of cocultured reconstructed human epidermis and human sensory neurons (RHE-huSN), respectively. In this combined model, human sensory neurons are derived from induced pluripotent stem cells (iPSC), and are growing in the immediate vicinity of 3D reconstructed human epidermis, i.e. on the backside of the polycarbonate support.



This innovative skin model allows to study the influence of ingredients or formulated products on processes involved in sensory skin and soothing properties, through the release of the neuropeptide CGRP upon capsaicin stimulation. Other endpoints are under validation. It is possible to evaluate the morphology of the epidermis after treatment, assess the secretory profile of the coculture, and perform gene or protein expression analyses.

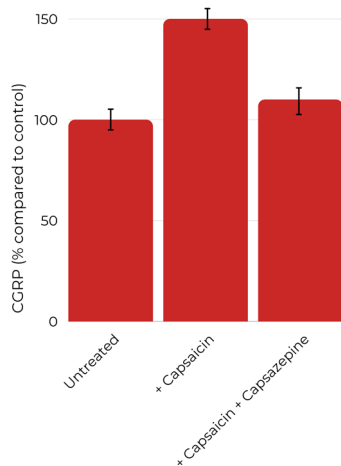
SKIN MODEL:

- **RHE-huSN:** Reconstructed Human Epidermis with iPSC-derived human Sensory Neurons forming a network on the backside of the porous polycarbonate filter
- Positive references available for full objectivation: beta-endorphin or capsazepine

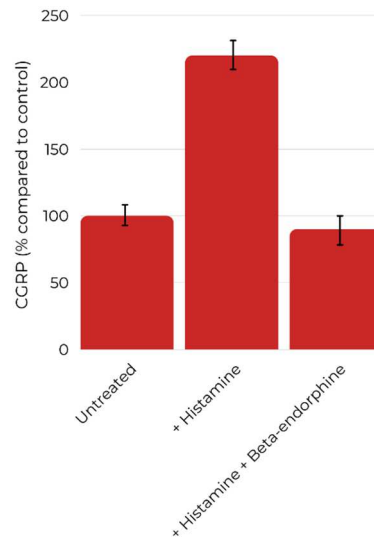
ENDPOINTS:

- Capsaicin or Histamine stimulations : quantification of the **CGRP release** by huSN alone or RHE-huSN
- Localization and quantification of protein markers by **immuno-staining:** neuronal network (β III-Tubulin and Neurofilament NF200)
- Morphological analysis by Hemalun/Eosin (H/E) staining

Increase of CGRP release in the culture medium of RHE-huSN upon capsaicin stimulation, compared to untreated and capsazepine treatments.



Quantity of CGRP neuropeptide released by human sensitive neurons after histamine treatment, compared to untreated and beta-endorphin treatments.



Tissue morphology after hemalum/eosin staining (H/E) and immunolabeling (IF) of neurofilament NF200 and β III-tubulin showing the presence of neuronal cells on the backside of the filter

