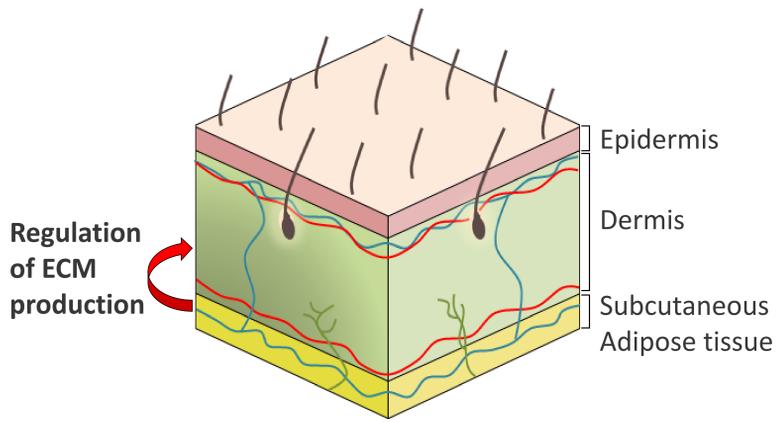


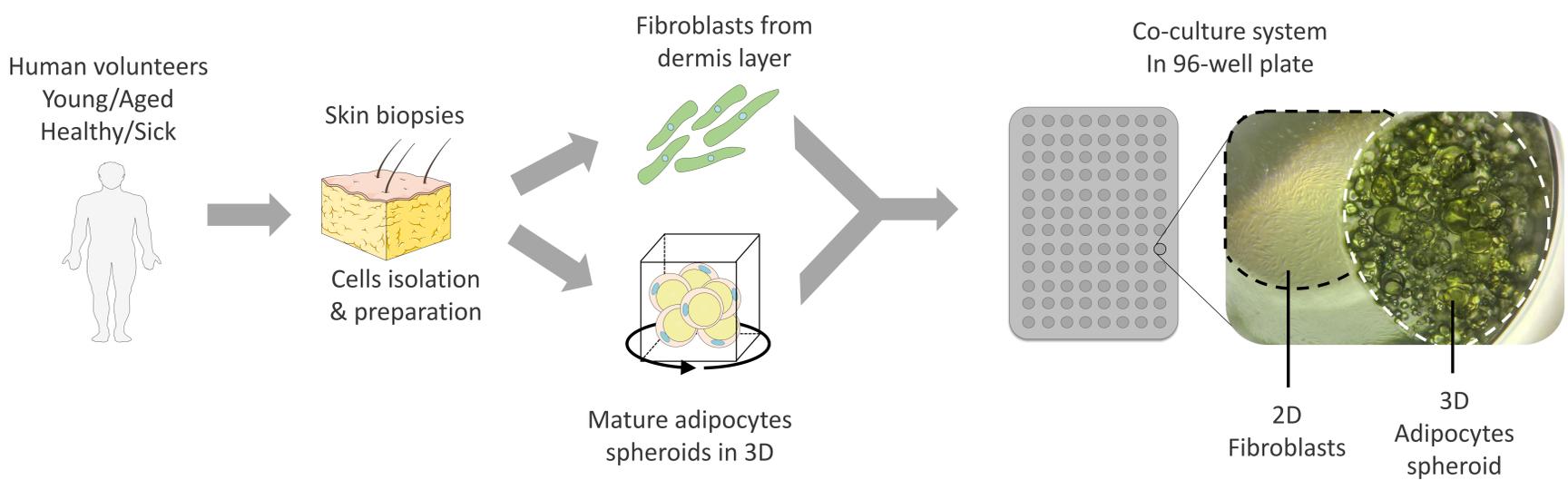
## CONTEXT



**Adipose cells from the hypodermis** play a crucial role in the mechanical and physiological properties of the skin. The role of these cells is not limited to their capacity **to fill volumes** by accumulating lipids, but they also regulate the **mechanical properties of the dermis** thanks to their endocrine function.

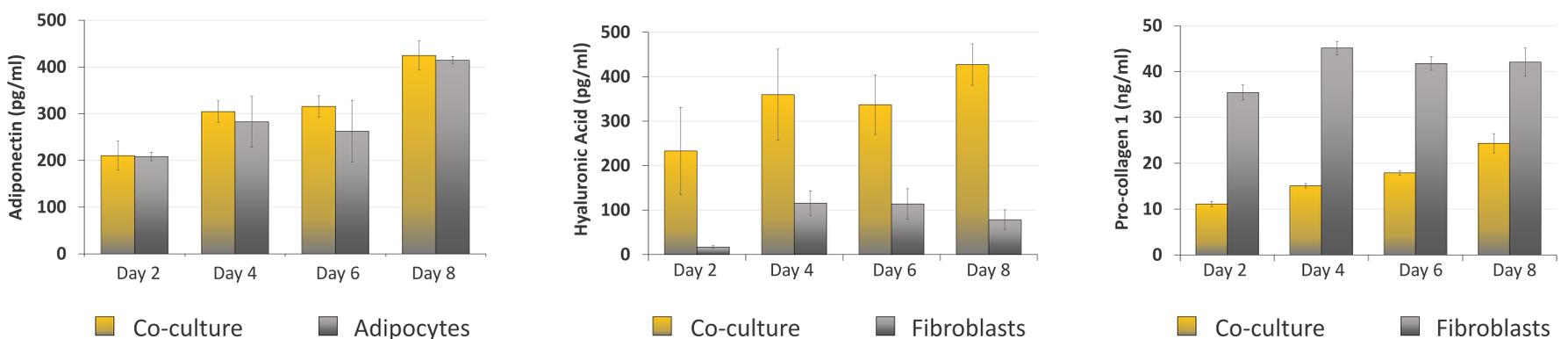
In this context, we have set-up a **novel in vitro model** allowing us to assess the bi-directional interactions between the hypodermis and the dermis, and to propose a suitable tool **to evaluate the efficacy of new compounds** to maintain skin quality.

## METHODS



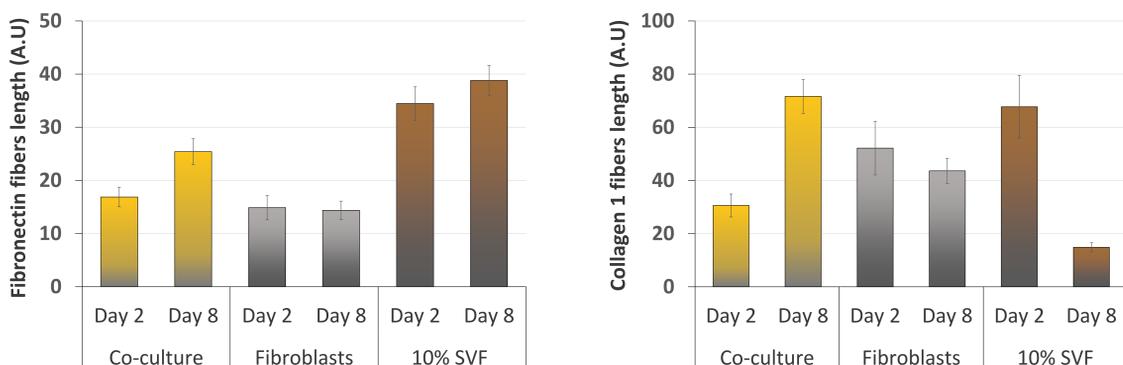
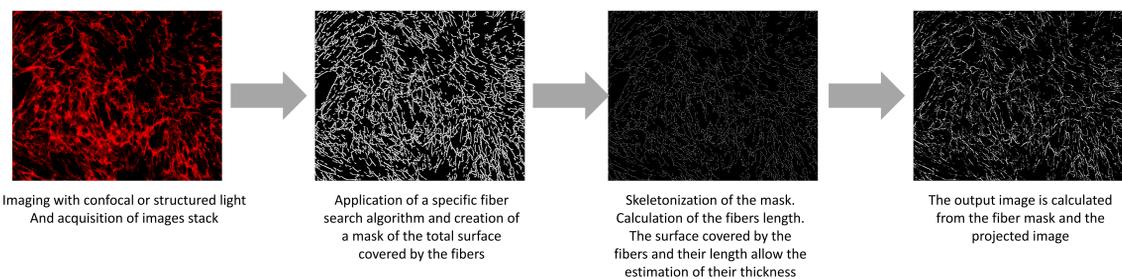
## RESULTS

### A. Extracellular secretion of Adiponectin, Hyaluronic Acid and Pro-collagen 1



### B. Organization and quantification of ECM fibers production by skin fibroblasts

Image processing for matrix fibers quantification:



## CONCLUSION

- We propose an **original in vitro co-culture** system allowing us to expose for the first time the direct interactions between the subcutaneous adipose cells and skin fibroblasts.
- We showed that the presence of mature adipocytes dramatically **increased the Hyaluronan** secretion by the fibroblasts and increased the total **length of fibronectin and collagen1** fibers.
- Our 3D co-culture system identifies the hypodermis as an original target for skin health and fit as a **useful tool for compounds development** targeting skin ECM.