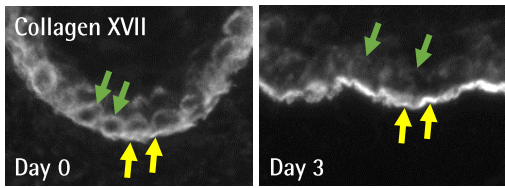


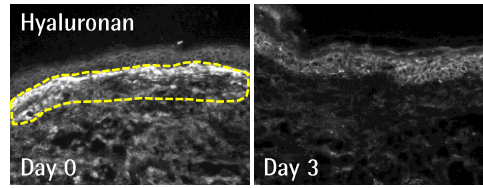
# Investigating the effect of a test compound on skin rejuvenation

## Investigating aging in human skin organ culture *ex vivo*

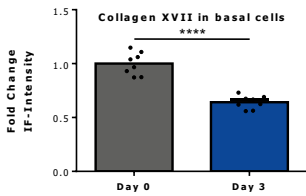
### 1. Full-thickness human skin organ culture is a model for skin aging



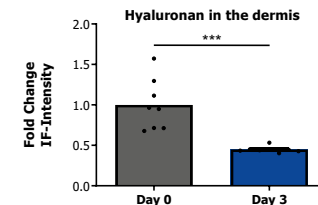
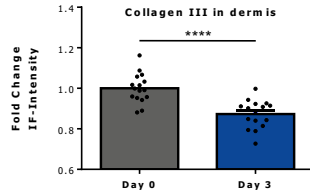
Representative images of Collagen XVII in basal cells.



Representative images of Hyaluronan in the dermis.



Data from one experiment. Mean±SEM, n= 2 punches analysed/group from one donor.



Data from one experiment. Mean±SEM, n= 2 punches analysed/group from one donor.

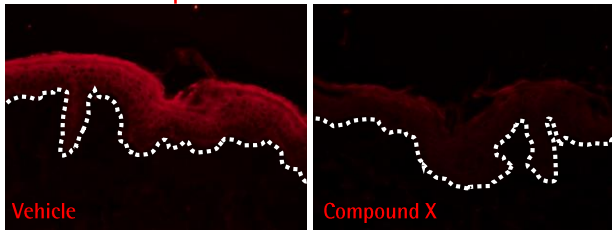
Our method:  
*Ex vivo* organ culture of full-thickness human skin with or without terminal hair follicles  
 (Lu et al., *Exp Dermatol* 2007; Bertolini et al., *Int J Cosmetic Sci* 2020)

Selections of our publications on the topic:  
 Bertolini et al., *Int J Cosmetic Sci* 2020; Vidali et al., *J Invest Dermatol* 2016; Vidali et al., *J Invest Dermatol* 2014

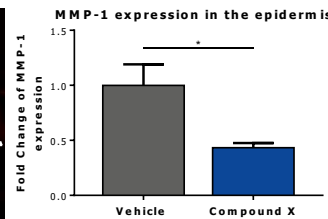
## Study example: Compound X promotes skin rejuvenation *ex vivo*

### 1. Compound X decreases degradation of extracellular matrix

#### Matrix metalloproteinase 1=MMP1



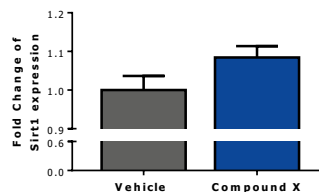
MMP-1 immunofluorescence reveals proteinase expression, responsible for degrading collagen, elastic, and fibrillin-rich microfibers.



Data from one experiment. Mean±SEM n= 2 punches analysed/group from one donor.

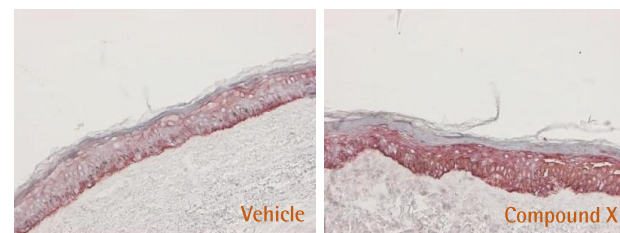
### 2. Compound X increases energy metabolism

#### Sirt1 expression in the epidermis



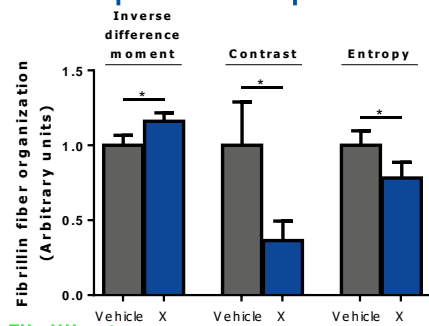
Pooled data from two independent experiments. Mean±SEM n= 2 punches analysed/group from two different donors.

#### Sirtuin 1= Sirt1



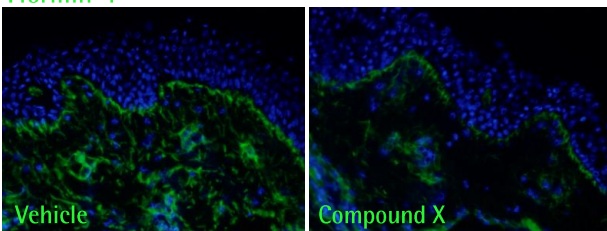
Sirt1 immunoreactivity indicates mitochondrial homeostasis, regulating senescence, delays aging, and ensures genomic stability.

### 3. Compound X improves dermal fiber organization



Pooled data from two independent experiments. Mean±SEM n= 2 punches analysed/group from two different donors.

#### Fibrillin-1



Fibrillin fiber organization is a marker for intrinsic and extrinsic aging.

Read-outs:  
 energy metabolism, mitochondrial biogenesis, oxidative stress, senescence, fiber composition, skin elasticity, ...

Contact us for a customized study:

Principal Scientist: Dr. Marta Bertolini (PhD)  
 COO: Dr. Janin Edelkamp (PhD)

m.bertolini@monasteriumlab.com  
 j.edelkamp@monasteriumlab.com  
 + 49 (0)251 93263-080

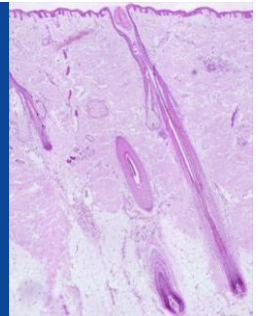
For more details see also our webpage:  
[www.monasteriumlab.com](http://www.monasteriumlab.com)



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## Monasterium Laboratory

Skin & Hair Research Solutions GmbH  
Mendelstr. 17, 48149 Münster, Germany

[www.monasteriumlab.com](http://www.monasteriumlab.com)

For enquiries, please contact:

Principal Scientist & Deputy General Manager:  
Dr. Marta Bertolini (PhD)

[m.bertolini@monasteriumlab.com](mailto:m.bertolini@monasteriumlab.com)  
+ 49 (0)251 93263-080