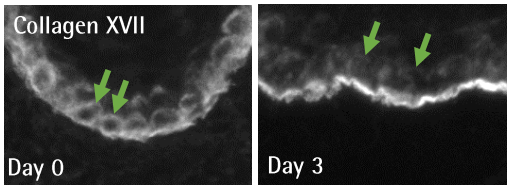
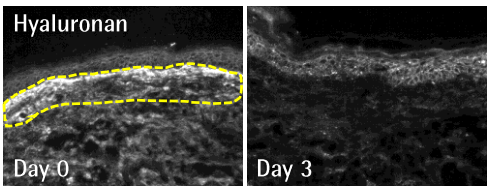
Investigating the effect of a test compound on skin rejuvenation

Investigating aging in human skin organ culture *ex vivo*

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

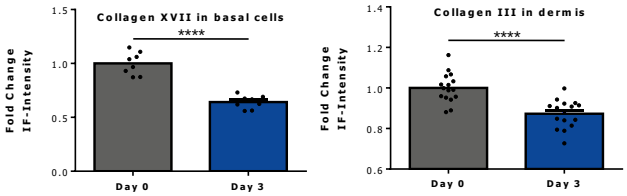


Representative images of Collagen XVII in basal cells.

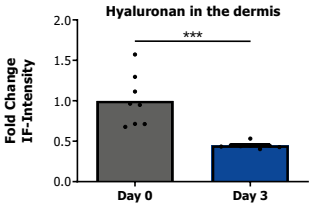


Representative images of Hyaluronan in the dermis.

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)



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



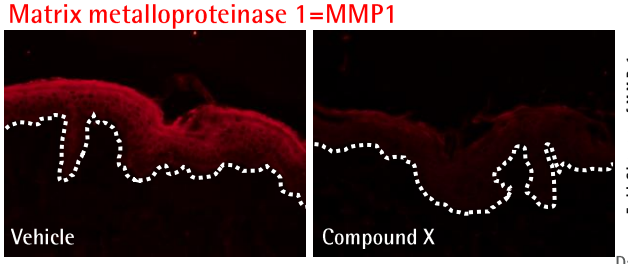
Data from one experiment. Mean±SEM, n= 2 punches analysed/group from one donor.

Selection 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

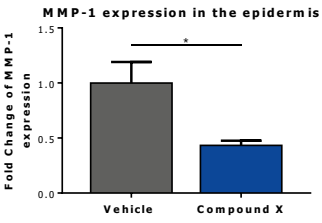
Study example: Compound X promotes skin rejuvenation *ex vivo*

1. Compound X decreases degradation of extracellular matrix

Matrix metalloproteinase 1=MMP1

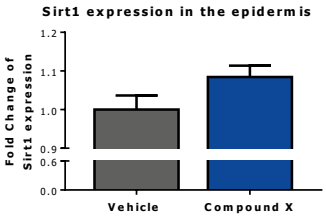


MMP-1 immunofluorescence reveals proteinase expression, responsible for degrading collagen, elastic, and fibrillin-rich microfibers.



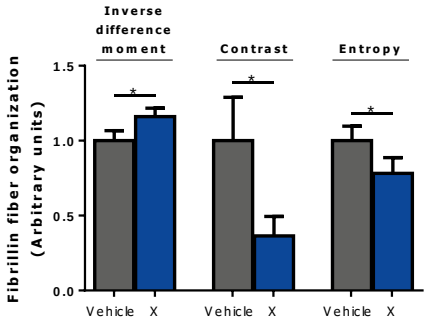
Data from one experiment. Mean±SEM n= 2 punches analysed/group from one donor.

2. Compound X increases energy metabolism



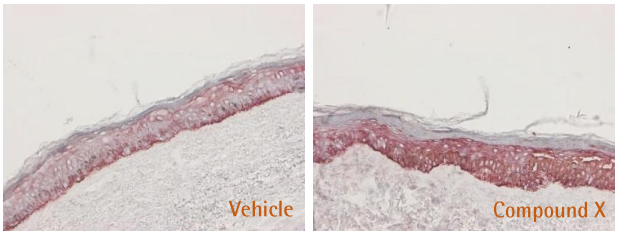
Pooled data from two independent experiments. Mean±SEM n= 2 punches analysed/group from two different donors.

3. Compound X improves dermal fiber organization



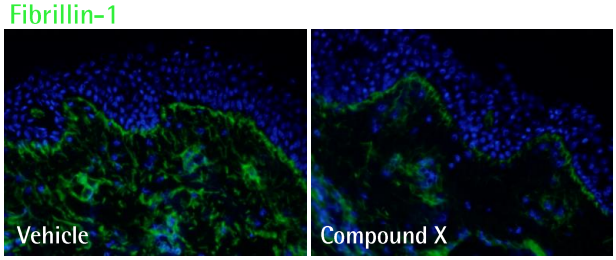
Pooled data from two independent experiments. Mean±SEM n= 2 punches analysed/group from two different donors.

Sirtuin 1= Sirt1



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

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:

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Founder & CEO: Prof. Dr. Ralf Paus

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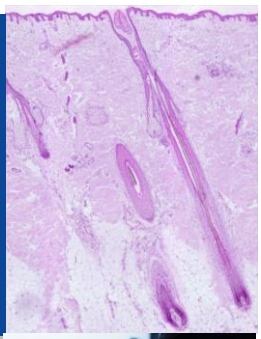

- Pre-clinical Research
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