

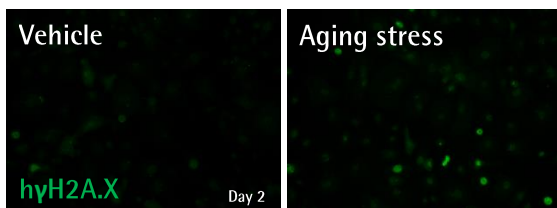
Investigating aging and senescence in epidermal keratinocytes *in vitro*

Study example: DNA Damage Response (DDR) and cellular senescence markers are upregulated in response to aging inducing stress

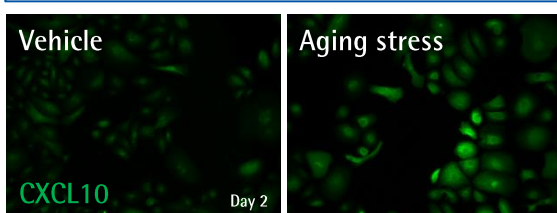
Our method:
In vitro
cell culture of
primary epidermal
keratinocytes

Similar results could
be obtained by aging
inducing stress in
dermal fibroblasts *in vitro* or human skin
organ culture *ex vivo*

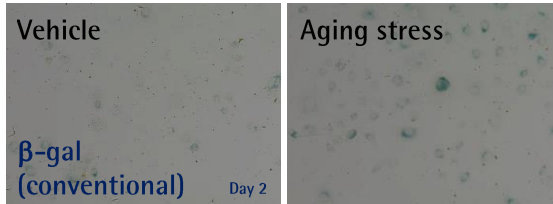
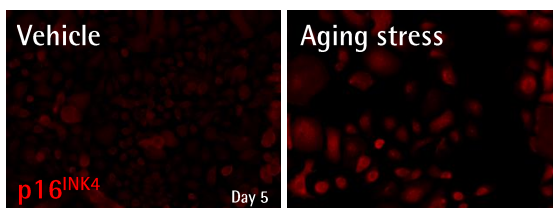
DNA Damage Response



Senescence Associated Secretory Phenotype



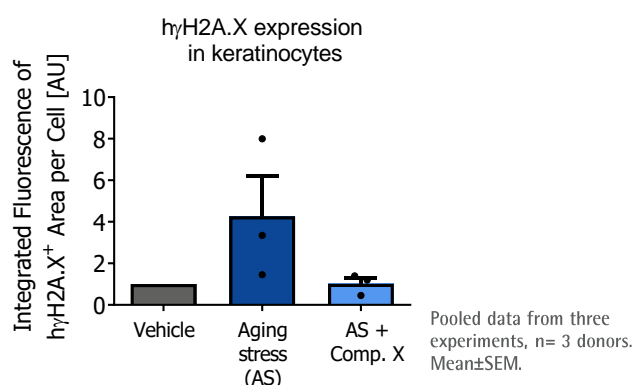
Cellular Senescence



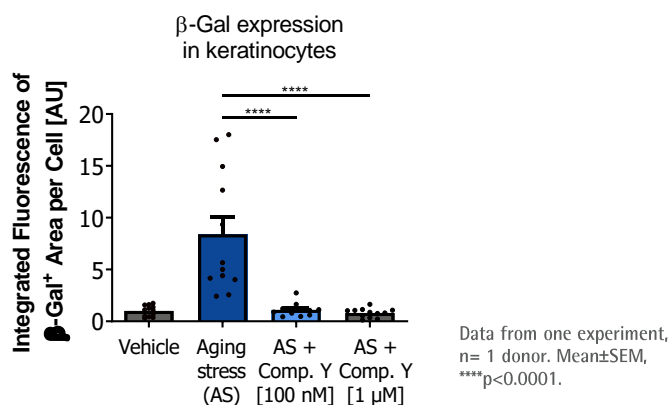
NEW MODEL: Aging stress is rapidly induced by exogenous stimuli

Study example: Compound X and Y rescue from aging and senescence phenotype

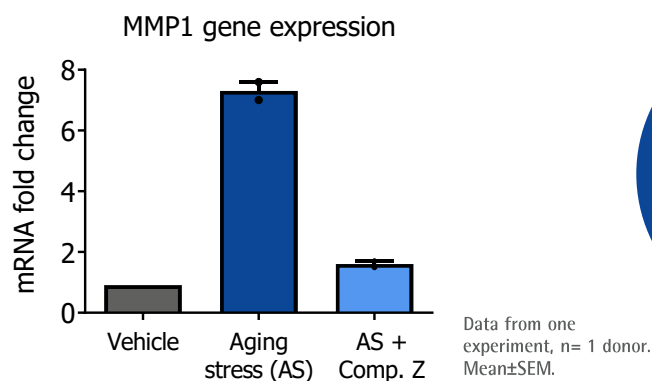
1. Compound X rescues hyH2A.X upregulation



2. Compound Y rescues upregulation of β-Gal activity



Study example: Compound Z rescues MMP1 up-regulation in response to aging stress



Read-outs:
energy metabolism,
mitochondrial biogenesis,
oxidative stress,
senescence, collagen
fiber composition
and structure, ...

**Contact us for a
customized study:**

CSO & Deputy General Manager:
Dr. Marta Bertolini (PhD)
Deputy CSO & Team Leader:
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

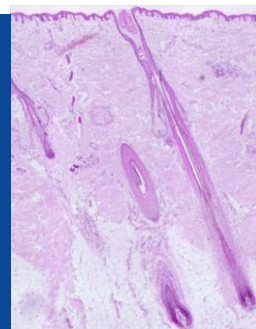


MONASTERIUM LABORATORY

A **QIMA** Life Sciences Company

*All about
skin and hair
bioscience!*

State-of-the-art technology and expertise
for all your pre-clinical, mechanistic, and
clinical needs in dermatology research.



- Pre-clinical Research
- Clinical Research
- Education



"We combine
our unique expertise,
our project design creativity,
and our passion to advance
our clients' success in
delivering novel and game-
changing skin and hair
research solutions"

Founder & CEO:
Prof. Dr. Ralf Paus

Your one-stop
source for all *in vitro*,
ex vivo and
in vivo testing
and more.

Reasons why you should choose
Monasterium Laboratory:

- Cutting edge methodologies and techniques
- Tailor-made & customized assays for all needs
- A focus on novel targets and therapeutics for skin & hair disorders: identify-characterize-validate
- Delivering mechanistic action stories, biomarkers & predictors of response
- Claims support for cosmetic ingredients in skin or hair follicle models
- Clinical trials carried out with strategic partners for healthy skin and hair benefits
- Comprehensive project reports & manuscript drafting and submission

Monasterium Laboratory

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

www.monasteriumlab.com

For enquiries, please contact:

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

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