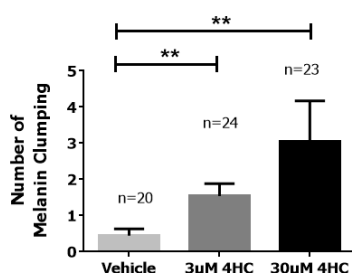


# Investigating effects on skin and hair cytotoxicity

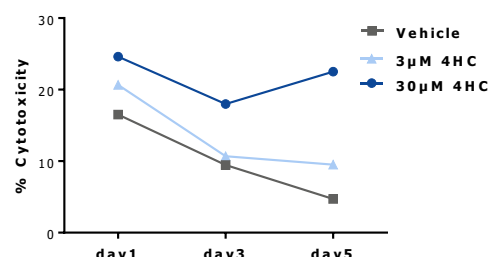
Study example: Compound X induces hair follicle cytotoxicity *ex vivo*

Our **method**:  
Human healthy  
microdissected full-  
length hair follicle *ex*  
*vivo* organ culture

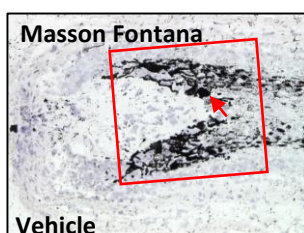
**4-Hydroperoxy  
Cyclophosphamide  
(4HC):**  
chemotherapy agent  
metabolite



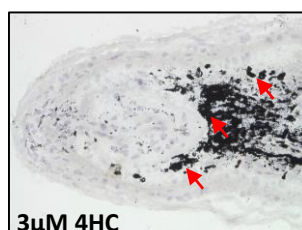
Pooled data from 3 independent experiments.  
Mean±SEM n=20-24HF from 3 donors



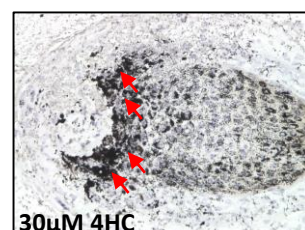
Data from 1 experiment, Mean±SEM n=12  
HF from 1 donor



Vehicle



3µM 4HC



30µM 4HC

**Masson Fontana:** histochemical staining revealing melanin content  
Red marked area shows region of analyses, red arrows show melanin clumps

Study example: UVR exerts skin cytotoxicity and epidermal damage *ex vivo*

Skin Cytotoxicity

Epidermal Sunburn cells

Apoptotic (TUNEL+) epidermal keratinocytes

low = 10J/cm<sup>2</sup> UVA+  
20mJ/cm<sup>2</sup> UVB  
high = 50J/cm<sup>2</sup> UVA  
+ 50mJ/cm<sup>2</sup> UVB  
(solar UV spectrum)

Our **method**:  
Human full-  
thickness skin *ex*  
*vivo* organ culture

**Stressors available:**  
UVR, pollution,  
hydrogen  
peroxide,...

Selection of  
**our publications**  
**on the topic:**

Gherardini et al., Int J Cosm Sci 2019; Poeggeler et al., Exp Dermatol 2010; Lu et al., J Invest Dermatol. 2009; Bodo et al., Am J Pathol 2007

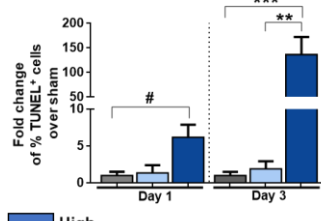
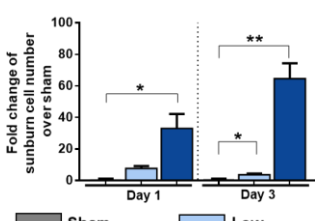
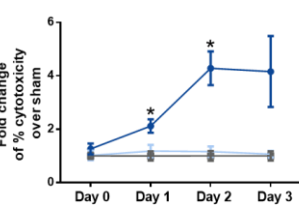
**Read-outs:**  
viability,  
proliferation and  
apoptosis,  
necroptosis, DNA  
damage, sunburn  
cells...

**Contact us for a  
customized study:**

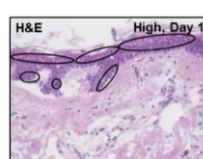
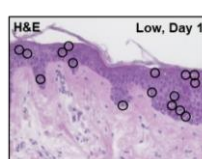
Principal Scientist: Dr. Marta Bertolini (PhD)  
COO: Dr. Janin Edelkamp (PhD)

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

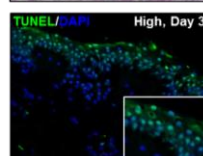
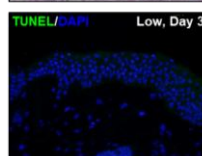
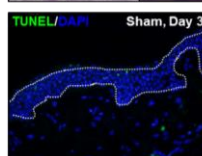
For more details see also our webpage:  
[www.monasteriumlab.com](http://www.monasteriumlab.com)



**Haematoxylin &  
Eosin (H&E)**  
histochemistry



**TUNEL immuno-  
fluorescence**



**We can test your compounds ability to:**

- Protect the skin or hair follicle from UVR
  - Prevent formation of free radicals
  - Protect the skin or hair follicles from pollutants
- ...possibly also with **topical application!**....



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bioscience!*

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- ▶ Clinical Research
- ▶ Innovative Technologies Program
- ▶ Education



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our unique expertise,  
our project design creativity,  
and our passion to advance  
our clients' success in  
delivering novel and game-  
changing skin and hair  
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Founder & CEO:  
Prof. Dr. Ralf Paus

#### 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](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