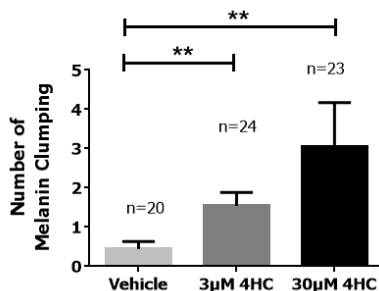


# Investigating effects on skin and hair cytotoxicity

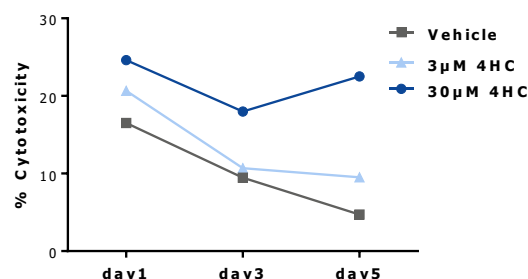
Study example: Compound X induces hair follicle cytotoxicity *ex vivo*

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

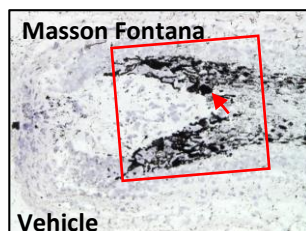
4-Hydroperoxy  
Cyclophosphamide  
(4HC):  
chemotherapy agent  
metabolite



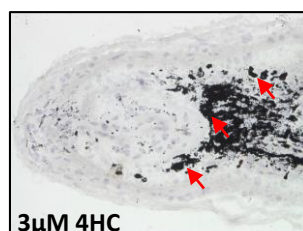
Pooled data from 3 independent experiments.  
Mean±SEM n=20-24HF from 3 donors



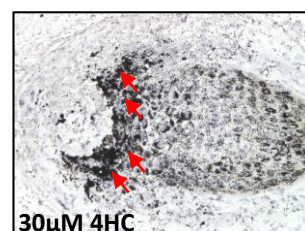
Data from 1 experiment, Mean±SEM n=12  
HF from 1 donor



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 Cosmet  
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:

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

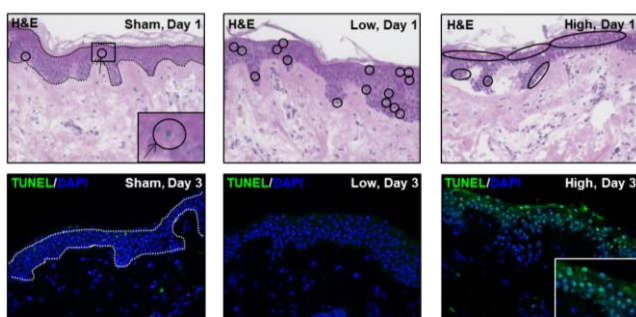
We can test your compounds ability to:

- 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!...

Haematoxylin &  
Eosin (H&E)  
histochemistry

TUNEL

immuno-fluorescence



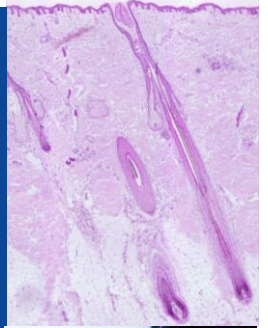


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- Delivering mechanistic action stories, biomarkers & predictors of response
- Claims support for cosmetic ingredients in skin or hair follicle models
- Clinical trials carried out with strategic partners for healthy skin and hair benefits
- Comprehensive project reports & manuscript drafting and submission

**Monasterium Laboratory**

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