# Investigating the effect of a test compound on hair follicle pigmentation

## Study example: Compound X stimulates pigmentation in gray hair follicles

### 1. Compound X stimulates melanin production



Pooled data from two independent experiments anagen VI hair follicles from two Mean±SEM, n=4-6 donors.



#### 2. Compound X tendentially promotes the formation of new melanosomes



Mean±SEM, n=5-8 anagen VI hair follicles from two donors



Selections of our publications on the topic: Chéret et al., Br J Dermatol. 2020; Hardmann et al., J Invest Dermatol 2015; Samuelov et al., J Invest Dermatol 2013; Gaspar et al., J Invest Dermatol 2011

**Read-outs:** Hair Pigmentation, Melanocyte Maturation, Melanin Transfer, Activation Melanogenesis, Growth Factors regulating Pigmentation

## 3. Compound X tendentially increases the activity of tyrosinase

Tyrosinase activity in the hair bulb 1.3 activity (Vehicle=1) in situ tyrosinase

> Vehicle Compound X

Pooled data from two independent experiments. Mean±SEM, n=4-5 anagen VI hair follicles from two donors



In situ assay revealing the enzymatic activity of tyrosinase, the rate-limiting enzyme regulating melanin production





Fold change of

8.8 0.0

Human microdissected amputated white hair follicles

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ABORATORY

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Human microdissected amputated pigmented hair follicles

Our method: *Ex vivo* organ culture of human healthy microdissected pigmented or gray/white hair follicle (Langan et al., Exp Dermatol 2015; Kloepper et al., Exp. Dermatol 2010)



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