

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

**Question addressed:** Does compound X stimulate re-pigmentation of gray/white hair follicles *ex vivo*?

**ML approach:** Microdissected gray/white human scalp hair follicles harvested from at least 2 healthy donors treated *ex vivo*. Selected readout parameters are evaluated in the entire anagen VI hair follicle or selected compartments (incl. using laser capture microdissection) and quantified using various techniques, e.g. analysis of the culture medium, immunohistology and quantitative (immuno-) histomorphometry, qRT-PCR, *in situ* zymography, *in situ* hybridization, and RNAseq.

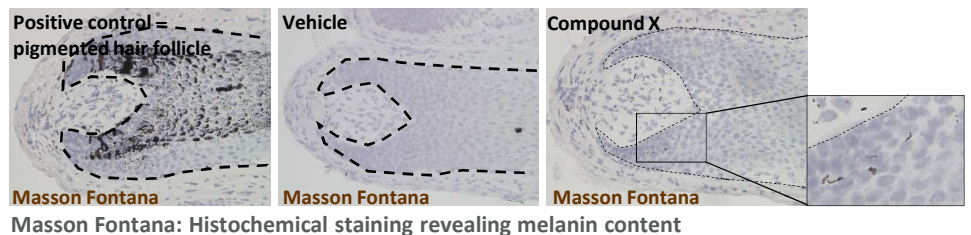
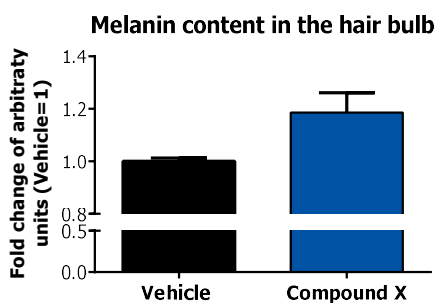
**Possible claims:** Compound X stimulates pigmentation of gray/white hair follicles *ex vivo*

### Study example: Compound X stimulates hair pigmentation

Human microdissected amputated white hair follicles

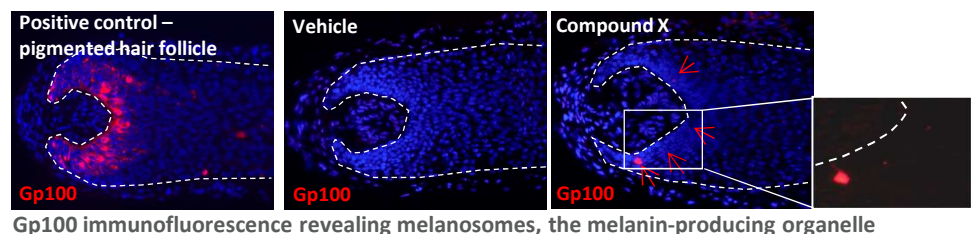
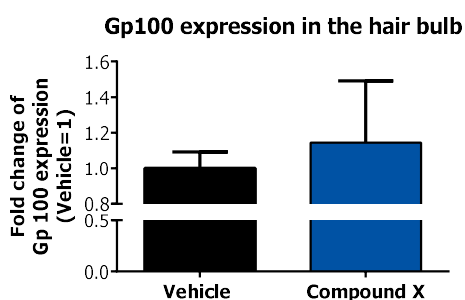


#### 1. Compound X stimulates melanin production *ex vivo*



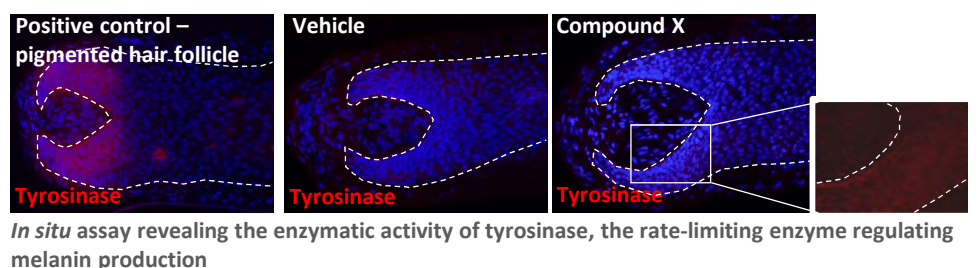
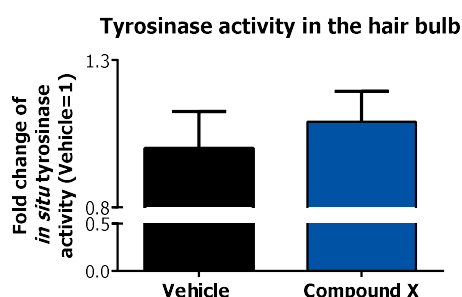
Pooled data from two independent experiments. Mean±SEM, n=4-6 anagen VI hair follicles from two donors.

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



Pooled data from two independent experiments. Mean±SEM, n=5-8 anagen VI hair follicles from two donors.

#### 3. Compound X tendentially increases the activity of tyrosinase *ex vivo*



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

➤ Additional analyses available with possibility of establishing 'specific' customized markers