Monasterium Laboratory
Skin & Hair Research Solutions

For information or enquiry, please contact:
Dr. Marta Bertolini (Chief Scientific Officer)
Tel:**+49 (0)251 93263-080**; Email: **m.bertolini@monasteriumlab.com**
Website: **www.monasteriumlab.com**

Analyzing the effect of a test compound on wound healing

Question addressed: **Does compound X promote skin wound healing *ex vivo*?**
Does compound X restore wound healing *ex vivo* under pathological conditions (e.g. diabetic ulcer)?

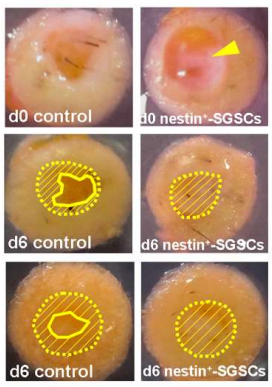
ML approach: Human full-thickness skin harvested from at least 2 healthy or diseased donors and treated *ex vivo* with test compounds of choice. Selected readout parameters are evaluated in the newly formed epithelial tongue, wound bed, or compartments (incl. using laser capture microdissection) and quantified using various techniques, e.g. analysis of the culture medium, immunohistology and quantitative (immuno-)histomorphometry, qRT-PCR, *in situ* zymography, and *in situ* hybridization.

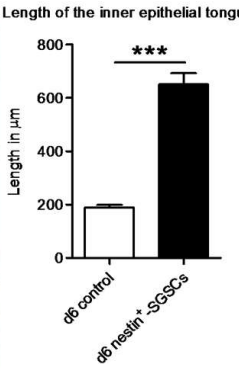
Possible claims: **Compound X stimulates wound healing *ex vivo*,**
Compound X restores wound healing *ex vivo* under pathological conditions

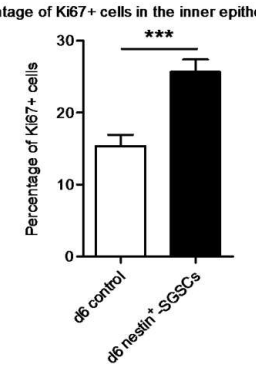
Case study: Nestin+ progenitor cells promote wound healing *ex vivo*

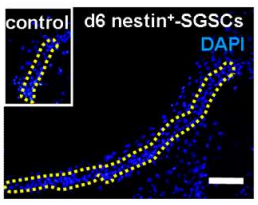
→ allogenic nestin+ progenitor cells were isolated from adult human sweat gland stroma (SGSC) and seeded into the wound bed

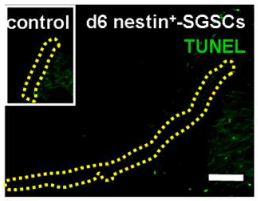
1. Nestin+ progenitor cells promote re-epithelialisation and proliferation of newly generated inner epithelial tongue *ex vivo*

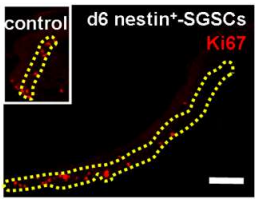


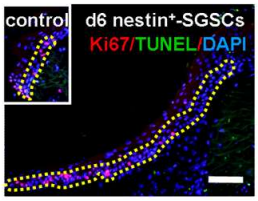






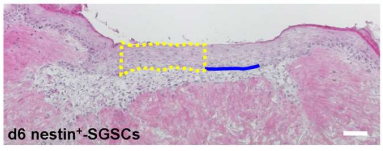






Ki-67: marker for proliferation.
TUNEL: marker for apoptosis.

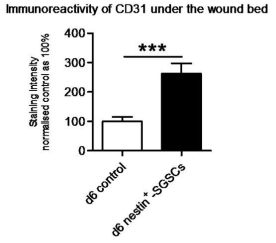
Pooled data from two independent experiments. Mean±SEM n= 4 punches analysed/group from two different donors.

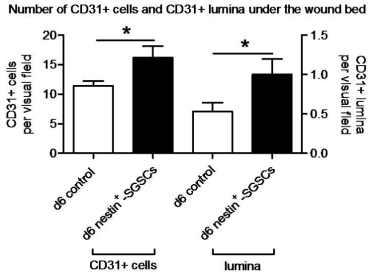


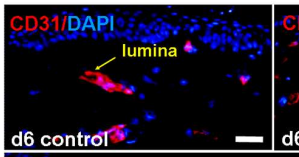
Haematoxylin & Eosin staining: overview and morphology

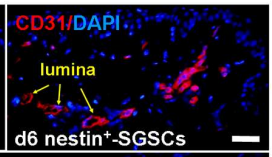
2. Transplanted human sweat gland stroma derived nestin+ cells may stimulate angiogenesis *in situ*

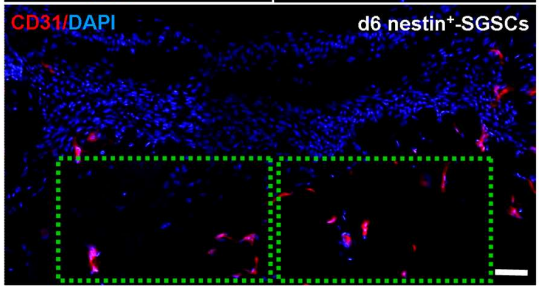
Pooled data from two independent experiments. Mean±SEM n= 4 punches analysed/group from two different donors.











CD31: marker for endothelial cells

➢ **Additional markers available with possibility of establishing 'specific' customised markers**