

# BDR SEMINAR (Kobe & online hybrid)

## Carlos Clavel

Hair and Pigmentation Development Laboratory, A\*STAR Skin Research Labs, A\*STAR, Singapore

**Tuesday, November 29, 2022**

16:00-16:50

1F Auditorium, DB Building C, Kobe / Broadcast online via Zoom

Zoom meeting URL will be announced on the event day by e-mail.

※Non-BDR members: Please register from the following link.

<https://krs1.riken.jp/m/bdrseminarregistration>

## Fate of the Hair Follicle Stem Cell Niche During Growth, Pigmentation, and Ageing

### Summary

The capacity of the stem cells (SC) to self-renewal and differentiate is tightly orchestrated by signals within the SC niche. In the skin, the hair follicle stem cell niche is the main reservoir of stem cells. Signaling alterations in the hair follicle SC will affect their niche by changing its fate.

Our main research objective is the establishment of a program to investigate intrinsic and extrinsic regulations of hair and skin pigmentation during normal development and skin disorders. In our research, we take advantage of our interdisciplinary and beyond state-of-the-art approaches, in which we combine basic research, bioengineering and clinical expertise to study the skin.

We have developed novel in vivo and in vitro tools to specifically target different compartments of the skin, including the hair follicle and melanocyte stem cell niches. Besides normal hair growth, we have generated in vivo models to induce premature ageing in different compartments of the hair follicle including the dermal papilla, the stem cell compartment and the melanocyte stem cells. All these premature ageing models have generated several hair growth and pigmentation phenotypes which can be used to report human disorders. In addition, we are developing in vitro assays to study human skin pigmentation. We have generated 2D and 3D skin organotypic to study how pigment production and transfer is affected by extrinsic factors like UV irradiation and air pollution.



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