The metabolic bases underneath aging-related inflammatory conditions in skin remain largely uncharacterized. Transcriptional coactivators of the PGC-1 family are master regulators of mitochondrial biogenesis and oxidative stress detoxification that exert their functions through coactivation of diverse transcription factors. Using gene knockdown and transcriptomics approaches, we have found that one third of the genes modulated during keratinocytes aging are shared with those modulated by PGC-1s gene silencing. While PGC-1s act as essential modulators of keratinocyte proliferation and terminal differentiation, their depletion quickly promotes innate immunity and antagonizes the development of epidermis equivalents. Importantly, we identified microenvironmental factors and cellular changes that can contribute to PGC-1s deregulation during aging. We also found that salicylate derivatives are potent inducers of PGC-1s that could antagonize innate immunity and restore keratinocyte functions. During this seminar, we will present key data supporting these observations, and will introduce experimental approaches to study PGC-1s in skin inflammatory conditions.

Note:
Prière d’avisser vos étudiants gradués et stagiaires postdoctoraux afin d’avoir la participation de tous.