



SEMINAR ANNOUNCEMENT

We would like to invite you to attend this seminar hosted by Prof Vinay Tergaonkar:

Date: 19 February 2019, Tuesday

Time: 11:00AM – 12:00PM

Venue: Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis

Speaker: Prof Eric Gilson, Director of the Institute for Research on Cancer and Aging, Nice

Title: Mitochondrial integrity in skeletal myofibers is controlled by a TRF2-SIRT3 axis: implications for muscle aging

Telomere shortening follows a developmentally regulated process that leads to replicative senescence. However, whether changes in telomeres are involved in post-mitotic aging of cells such as myofibers remains unknown. In this study, we discovered that expression levels of TRF2, a key telomere-capping protein, decline in aged human muscle. In cultured human myotubes, downregulation of TRF2 to levels similar to those observed in aged muscle tissues did not trigger telomere dysfunction, but suppressed expression of the mitochondrial Sirtuin 3 gene (SIRT3). This process led to oxidative stress and mitochondrial defects, two key hallmarks of muscle aging. We further provide evidence that the regulation of SIRT3 is mediated by TRF2 and involves long-range interactions between the subtelomeric SIRT3 locus and its proximal telomere. These results reveal a TRF2–SIRT3 axis linking telomere changes to muscle oxidative metabolism and unexpected connections between telomere state and muscle aging.

Biography:

Before the 90's, telomeres were mostly considered as DNA repeats of a certain length depending on the presence of telomerase. Overall, the work of Eric Gilson contributed to broaden this view by revealing an unusual organization of telomeric chromatin and unexpected links between this chromatin, telomere length, chromosome stability and senescence. Nowadays, the main objective of Eric Gilson research is to provide an integrated description of the telomere signaling pathways involved in aging and malignant transformation.

ALL ARE WELCOME (No registration required)

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