

## **The Keap1/Nrf2 Axis Regulates the Quiescence/Activation States of Adult Muscle Stem Cells**

**Lifang HAN**

**Division of Life Science, The Hong Kong University of Science and Technology, Hong Kong SAR, P. R.**

**China**

**Email: [ghanac@connect.ust.hk](mailto:ghanac@connect.ust.hk)**

Adult muscle satellite cells (MuSCs) are quiescent under normal homeostatic conditions. Upon muscle injury, MuSCs exit quiescence, re-enter the cell cycle to proliferate, and then differentiate and fuse to drive muscle regeneration. Although several factors and pathways are already known to regulate quiescence maintenance of MuSCs, a comprehensive picture remains to be established. Here, we reveal that loss of Keap1 in adult MuSCs impairs quiescence maintenance in a sex-dependent manner. In female mice, the loss of Keap1 in MuSCs leads to their spontaneous activation and gradual depletion. In male mice, Keap1 deletion in MuSCs drives cells into a GAlert-like state. Detailed mechanistic insights will be presented during my talk. Our study reveals an unexpected role of the Keap1/Nrf2 axis in controlling the quiescence/activation states in adult MuSCs.