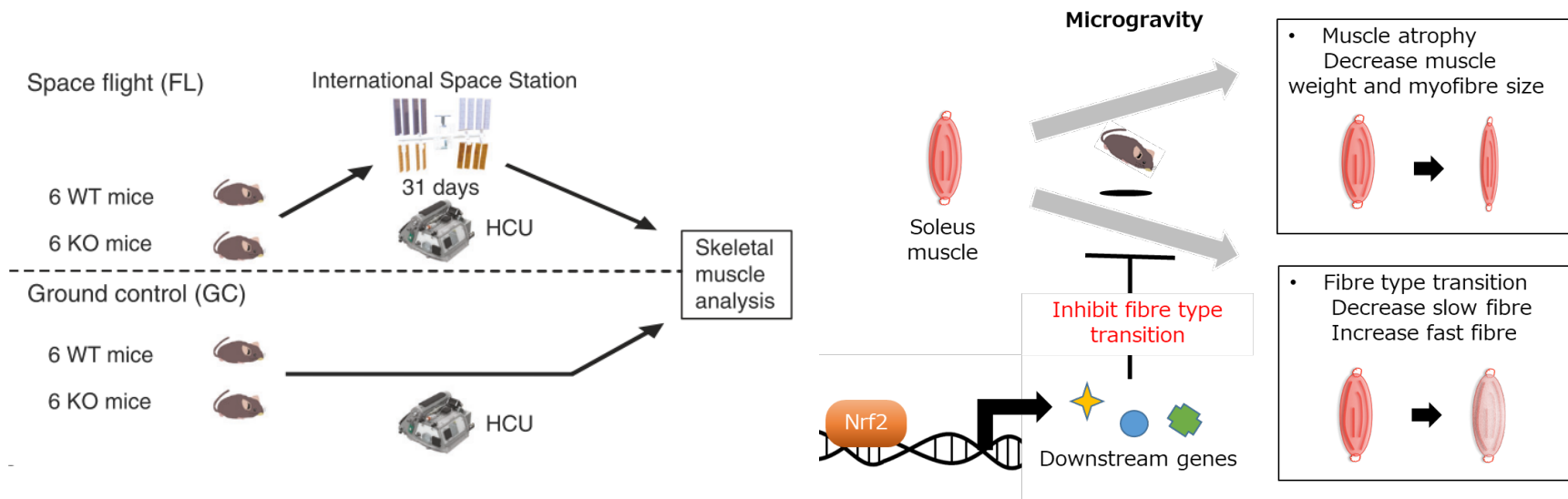


Nuclear factor E2-related factor 2 (NRF2) deficiency accelerates fast fibre type transition in soleus muscle during space flight



Main message : Microgravity induces atrophy and slow to fast transition of muscle fibre type in skeletal muscle. There are some reports that oxidative stress is related to the regulation of skeletal muscle plasticity, including muscle fibre size, as well as muscle fibre type transition. In order to investigate the role of NRF2, a master regulator of antioxidative response, in skeletal muscle under a microgravity environment, Nrf2-knockout (KO) mice were housed in the International Space Station for 31 days. Comparative analysis of soleus muscles revealed that there was no difference in the degree of muscle atrophy between wild-type mice and KO mice, but the accelerated fast fibre type transition was observed in KO mice. These data suggest that NRF2 may maintain the homeostasis of muscle fibre types.

References: Hayashi et al., Commun Biol. 2021 Jun 24;4(1):787.

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