

Intracellular Signaling and Regulation of Muscle Mass

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A complex network of intracellular signaling pathways regulates skeletal muscle mass in adult mammals through the control of both protein degradation and synthesis. The E3 Ubiquitin Ligase, MuRF1, has been associated with muscle atrophy and changes in protein degradation. Data will be presented showing how deletion of MuRF1 affects net protein balance through effects on both protein degradation and synthesis. Potential interactions between MuRF1 expression and mTORC1 activation following changes in neural activity and loading will be suggested and discussed. Finally, data on the effects of MuRF1 deletion on age-related loss of muscle mass and load-induced growth will be presented.