

第 467 回 難研セミナー

第 40 回 難治疾患共同研究拠点セミナー

下記により難研セミナーを開催しますので、多数御来聴下さい。

記

日 時 : 2012 年 2 月 3 日 (金) 11:00~12:30

場 所 : M&D タワー 23 階 セミナー室

演 者 : Prof. Siegfried LABEIT

Chair, Dept. for Integrative Pathophysiology,
University Hospital Mannheim, Germany

演 題 : Regulation of Muscle Trophicity by MuRF-Family
E3 Ubiquitin Ligases

要 旨 : Skeletal and heart muscle trophicity is regulated by the balance of anabolic and catabolic pathways. Pathophysiological conditions of chronic stress will cause catabolism to become dominant, resulting loss of appropriate skeletal and heart muscle contractility, and ultimately severe muscle atrophy.

Induction of the atrophy inducing gene program includes an up-regulation of E3 ubiquitin ligases as critical components. In particular MuRF1 has been implicated in this process as a so-called atrogin. Here we present novel data on the roles of the muscle specific ubiquitin E3 ligases MuRF1, and its homologs MuRF2 and MuRF3. In particular, MuRF1 and MuRF2 together appear to control trophicity of the myocardium synergistically. Proteome studies in conjunction with in vitro ubiquitination assays have identified critical in vivo targets of the MuRF1,2 enzymes. Mechanistically, MuRF1 and MuRF2 interact with an overlapping set of myocardial stress response genes, and these data propose that MuRF1 and MuRF2 mediate longterm stress adaptations during chronic heart failure. Within this seminar we will discuss also if therapeutic modulation of MuRF1,2 activities and of related myocardial stress response pathways may be helpful to support the stressed heart.

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