

Muscle Atrophy Ubiquitin Ligase Antibody Sampler Kit

Catalog # MK6170

Kit Components:

Catalog#	Description	Type	Size	Applications	Species Reactivity	MW (kDa)
AP2041	Atrogin-1	Rabbit pAb	50 µl	WB, E	H, R, M	41
MP3401	MuRF1 (C-terminal region)	Rabbit pAb	50 µl	WB, E, ICC	H, R, M	38
AX2045	Atrogin-1	Peptide	50µg	AB, E		
MX3405	MuRF1 (C-terminal region)	Peptide	50µg	AB, E		
RS3251	Anti-Rabbit Ig Light-Chain Specific:HRP	Mouse mAb	100 µl	WB, E		

Applications: WB = Western blot, E = ELISA, ICC = Immunocytochemistry, AB = Antibody blocking. Species: H = Human, R = Rat, M = Mouse.

Kit Summary:

The muscle atrophy antibody sampler kit can be used to detect the changes in the expression of muscle-specific ubiquitin ligases, Atrogin 1 and MuRF1. The kit also includes peptides for antibody blocking experiments and a secondary reagent for antibody detection.

Buffers and Storage:

Rabbit polyclonal affinity-purified antibodies are supplied in phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Secondary reagent is supplied in phosphate-buffered saline, 50% glycerol, and 1 mg/ml BSA. Store at -20°C. Stable for 1 year.

Blocking Peptides are supplied in phosphate-buffered saline and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Background:

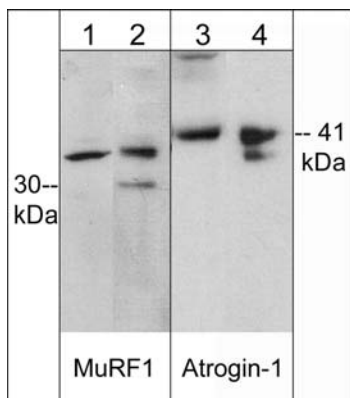
Muscle proteolysis is regulated by the ATP-dependent ubiquitin-proteasome system. This system involved ubiquitination of specific proteins, leading to recognition and degradation by the 26S proteasome complex. Ubiquitination requires interactions with ubiquitin related proteins, ubiquitin-activating (E1), ubiquitin-conjugating (E2), and ubiquitin-ligating enzymes (E3) known as ligases. Two muscle specific ubiquitin ligases have been identified, muscle ring finger 1 (MuRF-1) and Atrogin 1. Both ligases are regulated by the Akt1/FOXO1 signaling pathway, and both proteins have been shown to be upregulated prior to the onset of atrophy in multiple models of muscle wasting, including disuse and cachexia. MuRF1 is also known as TRIM63, SMRZ, and RNF28, and its expression is upregulated after TNF α treatment in C2C12 cells and muscle tissue, while localization of MuRF1 protein has been observed in the cytoplasm and nucleus of cells.

References:

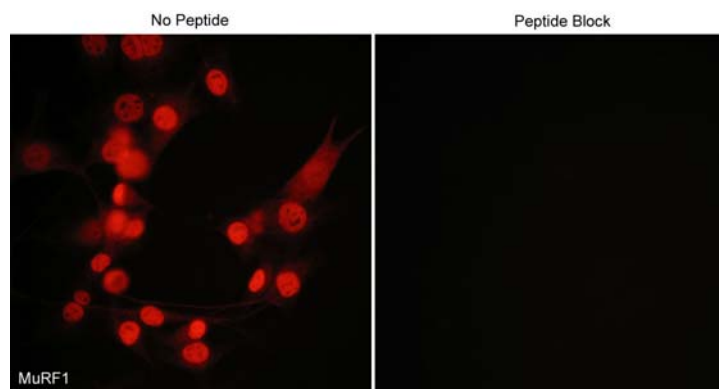
Bodine, S.C. (2001) *Science*. 294(5547):1704.
 Dai, K.S. & Liews, C.C. (2001) *J Biol. Chem.* 276(26):23992.
 Leger, B. et al. (2006) *J Physiol.* 576(3):923.
 Constantin, D. et al. (2007) *J Physiol.* 583(1):381.

Product References (AP2041):

Smith, M.A. et al. (2007) *Am. J. Phys. Cell. Phys.* 293:1947. (WB: mouse C2C12)
 Moylan, J.S. et al. (2008) *Am. J. Phys. Cell. Phys.* 295:986. (WB: mouse C2C12)



Western blot analysis of mouse heart tissue (lanes 1 & 3) or C2C12 cells (lanes 2 & 4). The blot was probed with anti-MuRF1 (C-terminal region) (lanes 1 & 2) or anti-Atrogin-1 (lanes 3 & 4).



Immunocytochemical labeling of MuRF1 in mouse C2C12 cells. The cells were labeled with rabbit polyclonal MuRF1 antibody, then detected using appropriate secondary antibody conjugated to Cy3. The antibody was used in the absence (left) or presence (right) of blocking peptide (MX3405).

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