

# MAFbx (F-9): sc-166806

## BACKGROUND

Muscle atrophy F-box (MAFbx) is an E3 ubiquitin ligase that initiates ATP-dependent ubiquitin-mediated proteolysis and promotes muscle atrophy. MAFbx transcript is abundant in cardiac and skeletal muscle undergoing atrophy. MAFbx<sup>-/-</sup> mice are resistant to muscle atrophy. MAFbx is thought to recognize and bind to some phosphorylated proteins and promote their ubiquitination and degradation during skeletal muscle atrophy. MAFbx interacts with MyoD by ubiquitination via a sequence found in transcriptional coactivators and therefore may play an important role in the course of muscle differentiation by determining the abundance of MyoD. MAFbx is specifically expressed in cardiac and skeletal muscle.

## REFERENCES

1. Bodine, S.C., et al. 2001. Identification of ubiquitin ligases required for skeletal muscle atrophy. *Science* 294: 1704-1708.
2. Dehoux, M.J., et al. 2003. Induction of MAFbx and MuRF ubiquitin ligase mRNAs in rat skeletal muscle after LPS injection. *FEBS Lett.* 544: 214-217.

## CHROMOSOMAL LOCATION

Genetic locus: FBX032 (human) mapping to 8q24.13, FBX025 (human) mapping to 8p23.3; Fbxo32 (mouse) mapping to 15 D1, Fbxo25 (mouse) mapping to 8 A1.1.

## SOURCE

MAFbx (F-9) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MAFbx of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAFbx (F-9) is available conjugated to agarose (sc-166806 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166806 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166806 PE), fluorescein (sc-166806 FITC), Alexa Fluor® 488 (sc-166806 AF488), Alexa Fluor® 546 (sc-166806 AF546), Alexa Fluor® 594 (sc-166806 AF594) or Alexa Fluor® 647 (sc-166806 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166806 AF680) or Alexa Fluor® 790 (sc-166806 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

MAFbx (F-9) is recommended for detection of MAFbx isoforms 1-3 and FBX025 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

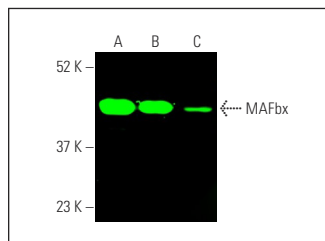
Molecular Weight of MAFbx: 42 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, U-251-MG whole cell lysate: sc-364176 or T98G cell lysate: sc-2294.

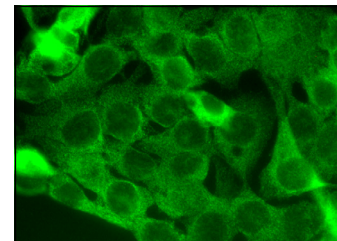
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



MAFbx (F-9) Alexa Fluor® 680: sc-166806 AF680.  
Direct near-infrared western blot analysis of MAFbx expression in T98G (A), U-251-MG (B) and SK-BR-3 (C) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



MAFbx (F-9): sc-166806. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Wang, F., et al. 2015. Proteomic analysis of mouse soleus muscles affected by hindlimb unloading and reloading. *Muscle Nerve* 52: 803-811.
2. Tanaka, N., et al. 2016. Acquired platinum resistance involves epithelial to mesenchymal transition through ubiquitin ligase FBX032 dysregulation. *JCI Insight* 1: e83654.
3. Worton, L.E., et al. 2018. Botulinum toxin A-induced muscle paralysis stimulates Hdac4 and differential miRNA expression. *PLoS ONE* 13: e0207354.
4. Chen, L., et al. 2019. Matrine improves skeletal muscle atrophy by inhibiting E3 ubiquitin ligases and activating the Akt/mTOR/FoxO3α signaling pathway in C2C12 myotubes and mice. *Oncol. Rep.* 42: 479-494.
5. Lee, H., et al. 2019. Z-ajoene from grushed garlic alleviates cancer-induced skeletal muscle atrophy. *Nutrients* 11: 2724.
6. Ono, Y., et al. 2020. TAK-242, a specific inhibitor of Toll-like receptor 4 signalling, prevents endotoxemia-induced skeletal muscle wasting in mice. *Sci. Rep.* 10: 694.
7. Wang, J., et al. 2020. Triptolide induces atrophy of myotubes by triggering IRS-1 degradation and activating the FoxO3 pathway. *Toxicol. In Vitro* 65: 104793.
8. Nguyen, T.T.N., et al. 2020. Preventive effects of dulaglutide on disuse muscle atrophy through inhibition of inflammation and apoptosis by induction of Hsp72 expression. *Front. Pharmacol.* 11: 90.
9. Yang, A., et al. 2020. The effect of vitamin D on sarcopenia depends on the level of physical activity in older adults. *J. Cachexia Sarcopenia Muscle* 11: 678-689.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

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