

# myoglobin (A-9): sc-74525

## BACKGROUND

Myoglobin is a cytosolic oxygen-binding protein responsible for the storage and diffusion of oxygen within myocytes. Expression of myoglobin is highest in skeletal and cardiac muscle. Myoglobin is necessary for the maintenance of mitochondrial respiration during heavy and sustained contractile activity, and it is thought to transport oxygen from erythrocytes to mitochondria. The genomic structure of myoglobin appears to be conserved across a broad range of species, and contains a putative polyadenylation signal and a polypyrimidine-rich region. Human myoglobin is specified by a single gene, and it has been identified in human smooth muscle.

## CHROMOSOMAL LOCATION

Genetic locus: MB (human) mapping to 22q12.3; Mb (mouse) mapping to 15 D3.

## SOURCE

myoglobin (A-9) is a mouse monoclonal antibody raised against amino acids 1-154 representing full length myoglobin 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.

myoglobin (A-9) is available conjugated to agarose (sc-74525 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74525 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74525 PE), fluorescein (sc-74525 FITC), Alexa Fluor<sup>®</sup> 488 (sc-74525 AF488), Alexa Fluor<sup>®</sup> 546 (sc-74525 AF546), Alexa Fluor<sup>®</sup> 594 (sc-74525 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-74525 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-74525 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-74525 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

myoglobin (A-9) is recommended for detection of myoglobin 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for myoglobin siRNA (h): sc-35993, myoglobin siRNA (m): sc-35994, myoglobin shRNA Plasmid (h): sc-35993-SH, myoglobin shRNA Plasmid (m): sc-35994-SH, myoglobin shRNA (h) Lentiviral Particles: sc-35993-V and myoglobin shRNA (m) Lentiviral Particles: sc-35994-V.

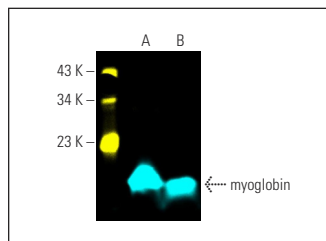
Molecular Weight of myoglobin: 17 kDa.

Positive Controls: rat heart extract: sc-2393, human heart extract: sc-363763 or human skeletal muscle extract: sc-363776.

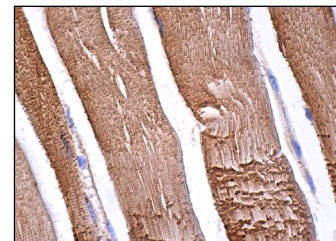
## STORAGE

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

## DATA



myoglobin (A-9) Alexa Fluor<sup>®</sup> 647: sc-74525 AF647. Direct fluorescent western blot analysis of myoglobin expression in human skeletal muscle (A) and human heart (B) tissue extracts. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Cruz Marker<sup>™</sup> Molecular Weight Standards detected with Cruz Marker<sup>™</sup> MW Tag-Alexa Fluor<sup>®</sup> 488: sc-516790.



myoglobin (A-9): sc-74525. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

## SELECT PRODUCT CITATIONS

- Meng, Z.X., et al. 2013. Baf60c drives glycolytic metabolism in the muscle and improves systemic glucose homeostasis through deutor-mediated Akt activation. *Nat. Med.* 19: 640-645.
- Marshall, K.D., et al. 2014. Proteomic mapping of proteins released during necrosis and apoptosis from cultured neonatal cardiac myocytes. *Am. J. Physiol., Cell Physiol.* 306: C639-C647.
- Bal, N.C., et al. 2017. Both brown adipose tissue and skeletal muscle thermogenesis processes are activated during mild to severe cold adaptation in mice. *J. Biol. Chem.* 292: 16616-16625.
- Crupi, A.N., et al. 2018. Oxidative muscles have better mitochondrial homeostasis than glycolytic muscles throughout life and maintain mitochondrial function during aging. *Aging* 10: 3327-3352.
- Pallone, G., et al. 2020. Different continuous training modalities result in distinctive effects on muscle structure, plasticity and function. *Biomed. Rep.* 12: 267-275.
- Bhagat, S., et al. 2021. Key role of extracellular RNA in hypoxic stress induced myocardial injury. *PLoS ONE* 16: e0260835.
- Wang, Q., et al. 2022. The hepatokine TSK maintains myofiber integrity and exercise endurance and contributes to muscle regeneration. *JCI Insight* 7: e154746.
- Li, N., et al. 2022. Myoglobin promotes macrophage polarization to M1 type and pyroptosis via the RIG-I/Caspase1/GSDMD signaling pathway in CS-AKI. *Cell Death Discov.* 8: 90.

## RESEARCH USE

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