

# Actin (SPM161): sc-56459

## BACKGROUND

All eukaryotic cells express Actin, which often constitutes as much as 50% of total cellular protein. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. While lower eukaryotes, such as yeast, have only one Actin gene, higher eukaryotes have several isoforms encoded by a family of genes.  $\alpha$ -Actin expression is limited to various types of muscle, whereas  $\beta$ -Actin and  $\gamma$ -Actin are the principle constituents of filaments in other tissues. Members of the small GTPase family regulate the organization of the Actin cytoskeleton. Rho controls the assembly of Actin stress fibers and focal adhesion, Rac regulates Actin filament accumulation at the plasma membrane and Cdc42 stimulates formation of filopodia.

## SOURCE

Actin (SPM161) is a mouse monoclonal antibody raised against Actin from gizzard of chicken origin.

## PRODUCT

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

## APPLICATIONS

Actin (SPM161) is recommended for detection of pan-Actin of mouse, rat, human, avian and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Actin siRNA (h): sc-29191, Actin siRNA (m): sc-29192, Actin shRNA Plasmid (h): sc-29191-SH, Actin shRNA Plasmid (m): sc-29192-SH, Actin shRNA (h) Lentiviral Particles: sc-29191-V and Actin shRNA (m) Lentiviral Particles: sc-29192-V.

Molecular Weight of Actin: 43 kDa.

Positive Controls: A549 cell lysate: sc-2413, HeLa whole cell lysate: sc-2200 or NAMALWA cell lysate: sc-2234.

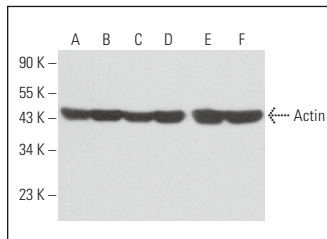
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

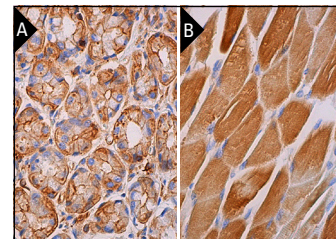
## STORAGE

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

## DATA



Actin (SPM161): sc-56459. Western blot analysis of Actin expression in HeLa (A), A2058 (B), A549 (C), NAMALWA (D), J774.A1 (E) and C6 (F) whole cell lysates.



Actin (SPM161): sc-56459. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic and membrane staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

## SELECT PRODUCT CITATIONS

- Guo, Y., et al. 2010. IKK $\beta$  specifically binds to p16 and phosphorylates Ser8 of p16. *Biochem. Biophys. Res. Commun.* 393: 504-508.
- Tseng, C.W., et al. 2018. Transketolase regulates the metabolic switch to control breast cancer cell metastasis via the  $\alpha$ -ketoglutarate signaling pathway. *Cancer Res.* 78: 2799-2812.
- Canato, M., et al. 2019. Excessive accumulation of Ca<sup>2+</sup> in mitochondria of Y522S-RYR1 knock-in mice: a link between leak from the sarcoplasmic reticulum and altered redox state. *Front. Physiol.* 10: 1142.
- Li, J., et al. 2020. PTC209, a specific inhibitor of BMI1, promotes cell cycle arrest and apoptosis in cervical cancer cell lines. *Anticancer Res.* 40: 133-141.
- Baraldo, M., et al. 2021. Raptor is critical for increasing the mitochondrial proteome and skeletal muscle force during hypertrophy. *FASEB J.* 35: e22031.
- Phillips, C.L., et al. 2022. Calpain-mediated proteolysis of vimentin filaments is augmented in giant axonal neuropathy fibroblasts exposed to hypotonic stress. *Front. Cell Dev. Biol.* 10: 1008542.
- Dalal, S., et al. 2023. Post-ischemic cardioprotective potential of exogenous ubiquitin in myocardial remodeling late after ischemia/reperfusion injury. *Life Sci.* 312: 121216.

## RESEARCH USE

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



See  $\beta$ -Actin (C4): sc-47778 for  $\beta$ -Actin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.