

# Actin (NH3): sc-58679

## 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. At least six types of Actin are present in mammalian tissues and fall into three classes.  $\alpha$ -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. Cdc42 stimulates formation of filopodia.

## REFERENCES

- Doolittle, R.F. 1995. The origins and evolution of eukaryotic proteins. *Philos. Trans. R. Soc. Lond., B, Biol. Sci.* 349: 235-240.
- Maccioni, R.B. and Cambiazo, V. 1995. Role of microtubule-associated proteins in the control of microtubule assembly. *Physiol. Rev.* 75: 835-864.

## SOURCE

Actin (NH3) is a mouse monoclonal antibody raised against monocytes and U-937 histolytic lymphoma of human origin.

## PRODUCT

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

Actin (NH3) is available conjugated to either phycoerythrin (sc-58679 PE) or fluorescein (sc-58679 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

## APPLICATIONS

Actin (NH3) is recommended for detection of Actin of mouse, rat, human and rabbit 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per  $1 \times 10^6$  cells); non cross-reactive with the N-terminal 40 amino acids.

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: A-431 whole cell lysate: sc-2201, NIH/3T3 whole cell lysate: sc-2210 or Raji whole cell lysate: sc-364236.

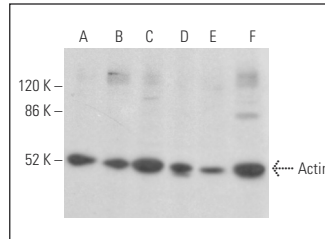
## STORAGE

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

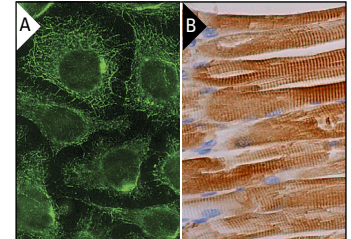
## RESEARCH USE

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

## DATA



Actin (NH3): sc-58679. Western blot analysis of Actin expression in IMR-32 (A), A-431 (B), SK-N-SH (C), Sol8 (D), NIH/3T3 (E) and Raji (F) whole cell lysates.



Actin (NH3): sc-58679. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

## SELECT PRODUCT CITATIONS

- Kaponis, A., et al. 2008. Coelomic cells show apoptosis via Fas/FasL system: a comparative study between healthy human pregnancies and missed miscarriages. *Hum. Reprod.* 23: 1159-1169.
- Gardet, A., et al. 2010. LRRK2 is involved in the IFN- $\gamma$  response and host response to pathogens. *J. Immunol.* 185: 5577-5585.
- Barboro, P., et al. 2011. Androgen receptor and heterogeneous nuclear ribonucleoprotein K colocalize in the nucleoplasm and are modulated by bicalutamide and 4-hydroxy-tamoxifen in prostatic cancer cell lines. *Prostate* 71: 1466-1479.
- Chen, T., et al. 2012. Cardioprotection from oxidative stress in the newborn heart by activation of PPAR $\gamma$  is mediated by catalase. *Free Radic. Biol. Med.* 53: 208-215.
- Cipolletta, E., et al. 2015. Targeting the CaMKII/ERK interaction in the heart prevents cardiac hypertrophy. *PLoS ONE* 10: e0130477.
- Yao, J., et al. 2016. piR-651 and its function in 95-D lung cancer cells. *Biomed. Rep.* 4: 546-550.
- Wang, R., et al. 2017. PDE5 inhibitor tadalafil and hydroxychloroquine cotreatment provides synergistic protection against type 2 diabetes and myocardial infarction in mice. *J. Pharmacol. Exp. Ther.* 361: 29-38.
- Cai, S., et al. 2018. Knockout of zebrafish interleukin 7 receptor (IL7R) by the CRISPR/Cas9 system delays retinal neurodevelopment. *Cell Death Dis.* 9: 273.
- Uckelely, Z.M., et al. 2019. Quantitative proteomics of Uukuniemi virus—host cell interactions reveals GBF1 as proviral host factor for phleboviruses. *Mol. Cell. Proteomics* 18: 2401-2417.



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.