

# Actin (420-8): sc-69680

## 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  $\beta$  and  $\gamma$  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

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3. Schutt, C.E., et al. 1995. A discourse on modeling F-Actin. *J. Struct. Biol.* 115: 186-198.
4. Barkalow, K., et al. 1995. Actin cytoskeleton. Setting the pace of cell movement. *Curr. Biol.* 5: 1000-1002.
5. Nobes, C.D., et al. 1995. Rho, Rac, and Cdc42 GTPases regulate the assembly of multimolecular focal complexes associated with Actin stress fibers, lamellipodia, and filopodia. *Cell* 81: 53-62.
6. Graf, R., et al. 1996. Elastic fibres are an essential component of human placental stem villous stroma and an integrated part of the perivascular contractile sheath. *Cell Tissue Res.* 283: 133-141.
7. Furumura, M., et al. 1996. Actin bundles in human hair follicles as revealed by confocal laser microscopy. *Cell Tissue Res.* 283: 425-434.

## CHROMOSOMAL LOCATION

Genetic locus: ACTB (human) mapping to 7p15-p12, ACTG1 (human) mapping to 17q25; Actb (mouse) mapping to 5 G2, Actg1 (mouse) mapping to 11 E2.

## SOURCE

Actin (420-8) is a mouse monoclonal antibody raised against K-562 erythro-leukemia cell line of human origin.

## PRODUCT

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

## STORAGE

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

## APPLICATIONS

Actin (420-8) is recommended for detection of cytoplasmic Actin bundles of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Actin siRNA (h): sc-29191.

Molecular Weight of Actin: 43 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.