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beta-Actin Rabbit pAb, Loading Control

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Catalog # AP50810

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P60709
Reactivity	Rat, Human, Mouse
Predicted	Pig, Cat, Dog, Bee, Rabbit, Hamster, Chicken, Sheep, Fish
Host	Rabbit
Clonality	Polyclonal
Calculated MW	41737
Physical State	Liquid
Immunogen	Synthetic MAP peptide derived from human beta-Actin
Epitope Specificity	1-200/375
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Cytoplasm, cytoskeleton.
DISEASE	Defects in ACTA1 are the cause of nemaline myopathy type 3 (NEM3) [MIM:161800]. A form of nemaline myopathy. Nemaline myopathies are muscular disorders characterized by muscle weakness of varying severity and onset, and abnormal thread-or rod-like structures in muscle fibers on histologic examination. The phenotype at histological level is variable. Some patients present areas devoid of oxidative activity containg (cores) within myofibers. Core lesions are unstructured and poorly circumscribed. Defects in ACTA1 are a cause of myopathy congenital with excess of thin myofilaments (MPCETM) [MIM:161800]. A congenital muscular disorder characterized at histological level by areas of sarcoplasm devoid of normal myofibrils and mitochondria, and replaced with dense masses of thin filaments. Central cores, rods, ragged red fibers, and necrosis are absent.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Actin is a highly conserved protein and an essential component of cell cytoskeleton and plays an important role in cytoplasmic streaming, cell shape determination, cell division, organelle movement and extension growth. Preferentially expressed in young and expanding tissues, floral organ primordia, developing seeds and emerging inflorescence. Antibodies against plant Actin are useful as loading controls for Western Blotting.

Additional Information

Gene ID	60
Other Names	Actin, cytoplasmic 1, 3.6.4.-, Beta-actin, Actin, cytoplasmic 1, N-terminally processed, ACTB

Dilution	WB=1:5000-50000,IHC-P=1:200-1000,IHC-F=1:200-1000,ICC/IF=1:100-500,IF=1:200-1000,Flow-Cyt=1 μg/Test
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	ACTB
Function	Actin is a highly conserved protein that polymerizes to produce filaments that form cross-linked networks in the cytoplasm of cells (PubMed:25255767, PubMed:29581253). Actin exists in both monomeric (G-actin) and polymeric (F-actin) forms, both forms playing key functions, such as cell motility and contraction (PubMed:29581253). In addition to their role in the cytoplasmic cytoskeleton, G- and F- actin also localize in the nucleus, and regulate gene transcription and motility and repair of damaged DNA (PubMed:29925947). Plays a role in the assembly of the gamma-tubulin ring complex (gTuRC), which regulates the minus-end nucleation of alpha-beta tubulin heterodimers that grow into microtubule protafilaments (PubMed:39321809, PubMed:38609661). Part of the ACTR1A/ACTB filament around which the dynactin complex is built (By similarity). The dynactin multiprotein complex activates the molecular motor dynein for ultra-processive transport along microtubules (By similarity).
Cellular Location	Cytoplasm, cytoskeleton. Nucleus Note=Localized in cytoplasmic mRNP granules containing untranslated mRNAs.

Background

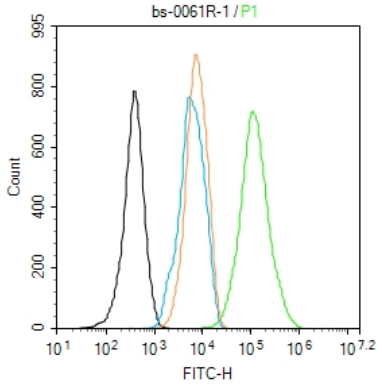
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References

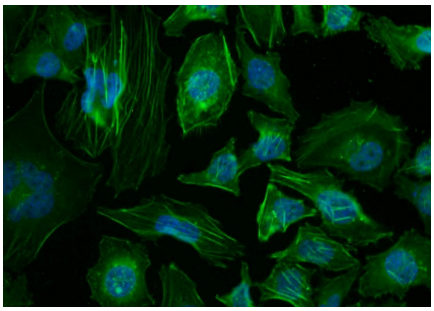
Ponte P.,et al.Nucleic Acids Res. 12:1687-1696(1984).
Nakajima-Iijima S.,et al.Proc. Natl. Acad. Sci. U.S.A. 82:6133-6137(1985).
Ohmori H.,et al.J. Cell Biol. 116:933-941(1992).
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Gevaert K.,et al.Nat. Biotechnol. 21:566-569(2003).

Images

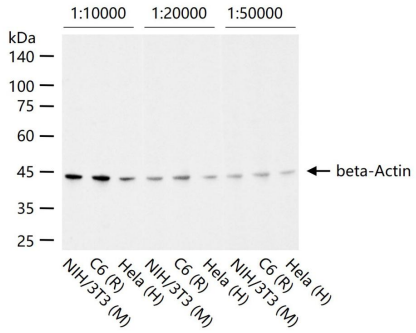
Blank control: NIH/3T3.
Primary Antibody (green line): Rabbit Anti-beta-Actin (Loading Control) antibody (AP50810)
Dilution: 1 μg /10^6 cells;
Isotype Control Antibody (orange line): Rabbit IgG .
Secondary Antibody : Goat anti-rabbit IgG-AF488
Dilution: 1 μg /test.
Protocol
The cells were fixed with 4% PFA (10min at room



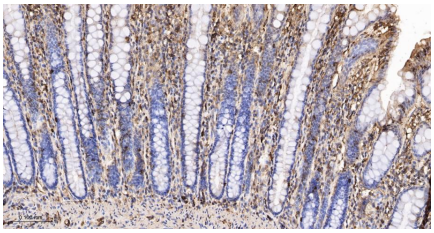
temperature)and then permeabilized with 90% ice-cold methanol for 20 min at -20℃. The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.



Tissue/cell: Hela cell; 4% Paraformaldehyde-fixed; Triton X-100 at room temperature for 20 min; Blocking buffer (normal goat serum, C-0005) at 37°C for 20 min; Antibody incubation with (beta-Actin) polyclonal Antibody, Unconjugated (AP50810) 1:100, 90 minutes at 37°C; followed by a conjugated Goat Anti-Rabbit IgG-FITC antibody at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the cell nuclei.



25 ug total protein per lane of various lysates (see on figure) probed with beta-Actin polyclonal antibody, unconjugated (AP50810) at 1:10000-1:50000 dilution and 4°C overnight incubation. Followed by conjugated secondary antibody incubation at r.t. for 60 min.



Paraformaldehyde-fixed, paraffin embedded Human Colon; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with beta-Actin Polyclonal Antibody, Unconjugated (AP50810) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit, SP-0023) and DAB (C-0010) staining.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.