

**Beta-actin Antibody**  
**Purified Mouse Monoclonal Antibody (Mab)**  
**Catalog # AM1021B**

**Specification**

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**Beta-actin Antibody - Product Information**

Application	WB, IHC-P,E
Primary Accession	<a href="#">P60709</a>
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG
Antigen Region	Unknown

**Beta-actin Antibody - Additional Information**

**Gene ID** 60

**Other Names**

Actin, cytoplasmic 1, Beta-actin, Actin, cytoplasmic 1, N-terminally processed, ACTB

**Target/Specificity**

ACTB recombinant protein is used to produce this monoclonal antibody.

**Dilution**

WB~~1:4000-1:8000

IHC-P~~1:25

E~~Use at an assay dependent concentration.

**Format**

Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.

**Storage**

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Beta-actin Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Beta-actin Antibody - 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 protofilaments (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

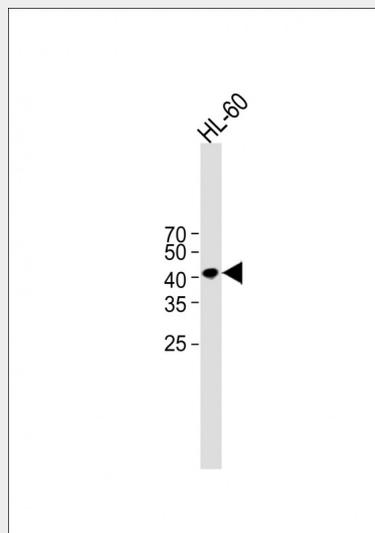
Cytoplasm, cytoskeleton. Nucleus Note=Localized in cytoplasmic mRNP granules containing untranslated mRNAs.

#### Beta-actin Antibody - Protocols

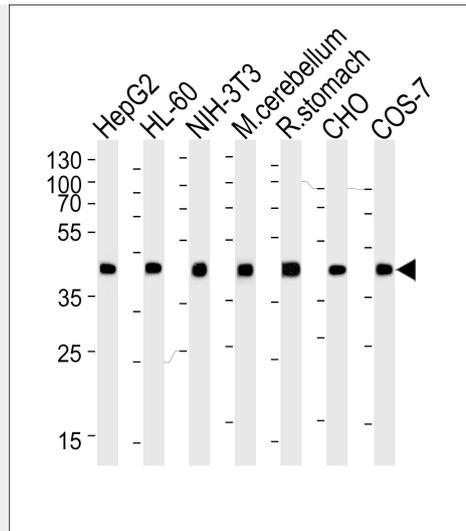
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

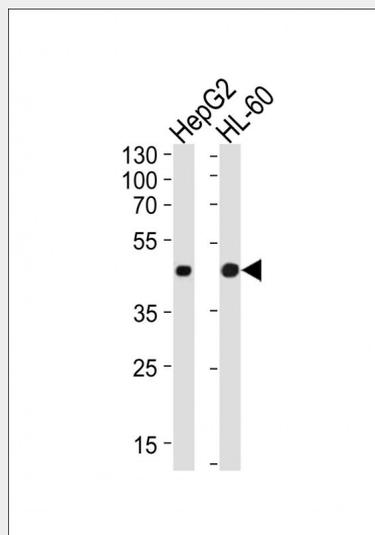
#### Beta-actin Antibody - Images



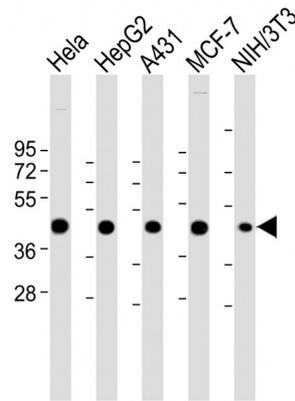
All lanes: Anti-Beta-actin Antibody at 1:2000 dilution + HL-60 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Mouse IgG, (H+L), Peroxidase conjugated (ASP1613) at 1/8000 dilution. Observed band size: 42 KDa Blocking/Dilution buffer: 5% NFD/MTBST.



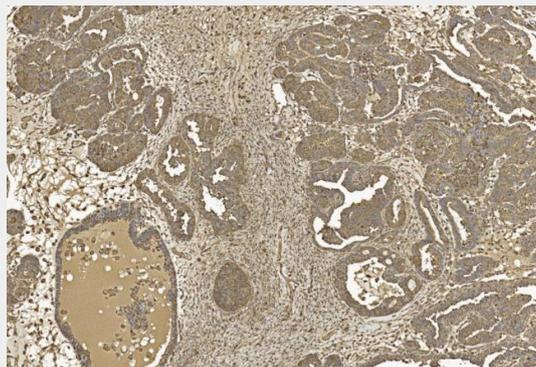
Western blot analysis of lysates from HepG2, HL-60, mouse NIH/3T3 cell line, mouse cerebellum and rat stomach tissue lysate, CHO, COS-7 cell line lysate(from left to right), using Beta-actin Antibody(Cat. #AM1021b). AM1021b was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:3000 dilution was used as the secondary antibody. Lysates at 35µg per lane.



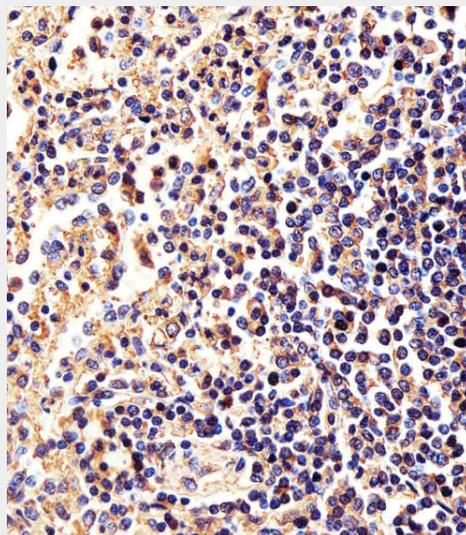
Western blot analysis of lysates from HepG2, HL-60 cell line (from left to right), using Beta-actin Antibody(Cat. #AM1021b). AM1021b was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysates at 20µg per lane.



All lanes : Anti-Beta-actin Antibody at 1:4000-1:8000 dilution Lane 1: HeLa whole cell lysate Lane 2: HepG2 whole cell lysate Lane 3: A431 whole cell lysate Lane 4: MCF-7 whole cell lysate Lane 5: NIH/3T3 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 42 kDa Blocking/Dilution buffer: 5% NFD/MTBST.



Immunohistochemical analysis of paraffin-embedded Human Ovarian cancer section using Pink1(Cat#am1021b). am1021b was diluted at 1:50 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.



Immunohistochemical analysis of paraffin-embedded H. spleen section using Beta-actin Antibody(Cat#AM1021b). AM1021b was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-Mouse IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.

### **Beta-actin Antibody - Background**

This gene encodes one of six different actin proteins. Actins are highly conserved proteins that are involved in cell motility, structure, and integrity. This actin is a major constituent of the contractile apparatus and one of the two nonmuscle cytoskeletal actins.

### **Beta-actin Antibody - References**

Sex-specific proteome differences in the anterior cingulate cortex of schizophrenia. Martins-de-Souza D, et al. J Psychiatr Res, 2010 Apr 8. PMID 20381070. Identification of a hormone-regulated dynamic nuclear actin network associated with estrogen receptor alpha in human breast cancer cell nuclei. Ambrosino C, et al. Mol Cell Proteomics, 2010 Jun. PMID 20308691. Contribution of rearranged actin structures to the spread of Ectromelia virus infection in vitro. Boratynska A, et al. Acta Virol, 2010. PMID 20201613. Molecular mechanisms underlying nucleocytoplasmic shuttling of actinin-4. Kumeta M, et al. J Cell Sci, 2010 Apr 1. PMID 20197409. Tyrosine phosphorylation of cofilin at Y68 by v-Src leads to its degradation through ubiquitin-proteasome pathway. Yoo Y, et al. Oncogene, 2010 Jan 14. PMID 19802004.

### **Beta-actin Antibody - Citations**

- [β-Cyclodextrin/dialdehyde glucan-coated keratin nanoparticles for oral delivery of insulin](#)
- [Development of a whole-cell biosensor for ethylene oxide and ethylene](#)
- [Varicella zoster virus glycoprotein E facilitates PINK1/Parkin-mediated mitophagy to evade STING and MAVS-mediated antiviral innate immunity](#)
- [SARS-CoV-2 main protease cleaves MAGED2 to antagonize host antiviral defense](#)
- [Chitosan nanoparticles for sustained release of metformin and its derived synthetic biopolymer for bone regeneration](#)
- [The PRMT5/WDR77 complex restricts hepatitis E virus replication](#)
- [Alamandine/MrgD axis prevents TGF-β1-mediated fibroblast activation via regulation of aerobic glycolysis and mitophagy](#)
- [Restriction of Influenza A Virus by SERINC5](#)
- [A comprehensive analysis of the circRNA-miRNA-mRNA network in osteocyte-like cell associated with Mycobacterium leprae infection](#)
- [Seasonal expressions of GPR41 and GPR43 in the colon of the wild ground squirrels \( \)](#)
- [An organoid-based screen for epigenetic inhibitors that stimulate antigen presentation and potentiate T-cell-mediated cytotoxicity](#)
- [MiR-279-3p regulates deltamethrin resistance through CYP325BB1 in Culex pipiens pallens](#)
- [Extracellular NLRP3 inflammasome particles are internalized by human coronary artery smooth muscle cells and induce pro-atherogenic effects](#)
- [Interleukin 1 beta-induced calcium signaling via TRPA1 channels promotes mitogen-activated protein kinase-dependent mesangial cell proliferation](#)
- [Fraxinellone alleviates kidney fibrosis by inhibiting CUG-binding protein 1-mediated fibroblast activation](#)
- [Pyrazolone derivative C29 protects against HFD-induced obesity in mice via activation of AMPK in adipose tissue](#)
- [Development of a New Reverse Genetics System for Ebola Virus](#)
- [Klotho overexpression suppresses apoptosis by regulating the Hsp70/Akt/Bad pathway in H9c2\(2-1\) cells](#)
- [Activation of unfolded protein response overcomes Ibrutinib resistance in diffuse large B-cell lymphoma](#)
- [DOT1L regulates thermogenic adipocyte differentiation and function via modulating H3K79 methylation](#)
- [AMPK activator C24 inhibits hepatic lipogenesis and ameliorates dyslipidemia in HFHC diet-induced animal models](#)

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- [Deoxycholic Acid Upregulates Serum Golgi Protein 73 through Activating NF-κB Pathway and Destroying Golgi Structure in Liver Disease](#)
- [UCH-L3 promotes non-small cell lung cancer proliferation via accelerating cell cycle and inhibiting cell apoptosis](#)
- [EBP2, a novel NPM-ALK-interacting protein in the nucleolus, contributes to the proliferation of ALCL cells by regulating tumor suppressor p53](#)
- [Design, synthesis and biological evaluation of thioether-containing lenalidomide and pomalidomide derivatives with anti-multiple myeloma activity](#)
- [Diphyllin Improves High-Fat Diet-Induced Obesity in Mice Through Brown and Beige Adipocytes](#)
- [The effects of glucose and fatty acids on CXCL10 expression in skeletal muscle cells](#)
- [p120-catenin suppresses proliferation and tumor growth of oral squamous cell carcinoma via inhibiting nuclear phospholipase C-γ1 signaling](#)
- [Very Early Involvement of Innate Immunity in Peripheral Nerve Degeneration in SOD1-G93A Mice](#)
- [Seasonal expressions of SF-1, StAR and P450scc in the scent glands of the muskrats \(Ondatra zibethicus\)](#)
- [Triose Kinase Controls the Lipogenic Potential of Fructose and Dietary Tolerance](#)
- [Let-7f promotes the differentiation of neural stem cells in rats](#)
- [Revealing the Therapeutic Potential of Botulinum Neurotoxin Type A in Counteracting Paralysis and Neuropathic Pain in Spinally Injured Mice](#)
- [Metformin Synergistically Enhanced the Antitumor Activity of Celecoxib in Human Non-Small Cell Lung Cancer Cells](#)
- [Berberine derivatives with a long alkyl chain branched by hydroxyl group and methoxycarbonyl group at 9-position show improved anti-proliferation activity and membrane permeability in A549 cells](#)
- [Discovery of a novel third-generation EGFR inhibitor and identification of a potential combination strategy to overcome resistance](#)
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- [Sex-determining region Y box 4 \(SOX4\) suppresses Hepatitis B virus replication by inhibiting hepatocyte nuclear factor 4α expression](#)
- [Coxsackievirus B3 Infection of Human Neural Progenitor Cells Results in Distinct Expression Patterns of Innate Immune Genes](#)
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- [Novel Class of Colony-Stimulating Factor 1 Receptor Kinase Inhibitors Based on an -Aminopyridyl Alkynyl Scaffold as Potential Treatment for Inflammatory Disorders](#)
- [Hepatic DNAJB9 Drives Anabolic Biasing to Reduce Steatosis and Obesity](#)
- [Predicting Radiation Resistance in Breast Cancer with Expression Status of Phosphorylated S6K1](#)
- [ADT-OH, a hydrogen sulfide-releasing donor, induces apoptosis and inhibits the development of melanoma in vivo by upregulating FADD](#)
- [Soluble CD146, a cerebrospinal fluid marker for neuroinflammation, promotes blood-brain barrier dysfunction](#)
- [Gambogic acid exhibits anti-metastatic activity on malignant melanoma mainly through inhibition of PI3K/Akt and ERK signaling pathways](#)
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- [CD146-HIF-1α hypoxic reprogramming drives vascular remodeling and pulmonary arterial hypertension](#)
- [Seasonal expressions of androgen receptor, estrogen receptors, 5α-reductases and](#)

- [P450arom in the epididymis of the male muskrat \(Ondatra zibethicus\).](#)
- [Berberine promotes the recruitment and activation of brown adipose tissue in mice and humans.](#)
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  - [The ubiquitin ligase CHIP modulates cellular behaviors of gastric cancer cells by regulating TRAF2.](#)
  - [Neutrophils and neutrophil extracellular traps enhance venous thrombosis in mice bearing human pancreatic tumors.](#)
  - [Quantitative Proteomics of Presynaptic Mitochondria Reveal an Overexpression and Biological Relevance of Neuronal MitoNEET in Postnatal Brain Development.](#)
  - [SIRT5 Regulates Brown Adipocyte Differentiation and Browning of Subcutaneous White Adipose Tissue.](#)
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- [Metformin Alleviates Aging Cellular Phenotypes in Hutchinson-Gilford Progeria Syndrome Dermal Fibroblasts.](#)
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- [Huaier aqueous extract inhibits proliferation and metastasis of tuberous sclerosis complex cell models through downregulation of JAK2/STAT3 and MAPK signaling pathways.](#)
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- [Insulin-like growth factor 1 promotes the proliferation and committed differentiation of human dental pulp stem cells through MAPK pathways.](#)
- [Huaier restrains proliferative and invasive potential of human hepatoma SKHEP-1 cells partially through decreased Lamin B1 and elevated NOV.](#)
- [Inhibition of IL-6 trans-signaling in the brain increases sociability in the BTBR mouse model of autism.](#)
- [Splicing mutation in Sbf1 causes nonsyndromic male infertility in the rat.](#)
- [12b-hydroxy-des-D-garcigerin A enhances glucose metabolism in insulin-resistant HepG2 cells via the IRS-1/PI3-K/Akt cell signaling pathway.](#)
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- [The anti-malaria drug artesunate inhibits cigarette smoke and ovalbumin concurrent exposure-induced airway inflammation and might reverse glucocorticoid insensitivity.](#)
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- [The association of HLA-G and immune markers in recurrent miscarriages.](#)
- [Ancestral TCDD exposure promotes epigenetic transgenerational inheritance of imprinted gene Igf2: Methylation status and DNMTs.](#)
- [Myocyte Enhancer Factor 2A Regulates Hydrogen Peroxide-Induced Senescence of Vascular Smooth Muscle Cells Via microRNA-143.](#)
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- [Interference with HMGB1 increases the sensitivity to chemotherapy drugs by inhibiting](#)

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  - [Autophagy activation attenuates renal ischemia-reperfusion injury in rats.](#)
  - [Poly\(A\) polymerase and the nuclear poly\(A\) binding protein, PABPN1, coordinate the splicing and degradation of a subset of human pre-mRNAs.](#)
  - [Nuclear Factor I-C promotes proliferation and differentiation of apical papilla-derived human stem cells in vitro.](#)
  - [Erythropoietin pretreatment exerts anti-inflammatory effects in hepatic ischemia/reperfusion-injured rats via suppression of the TLR2/NF-κB pathway.](#)
  - [Characterization of the zebrafish Ugt repertoire reveals a new class of drug-metabolizing UDP glucuronosyltransferases.](#)
  - [The Changes of 8-OHdG, hOGG1, APE1 and Pol β in Lenses of Patients with Age-Related Cataract.](#)
  - [MCL-1 degradation mediated by JNK activation via MEKK1/TAK1-MKK4 contributes to anticancer activity of new tubulin inhibitor MT189.](#)
  - [Regulatory interplay between NFIC and TGF-β1 in apical papilla-derived stem cells.](#)
  - [Focal adhesion kinases and calcium/calmodulin-dependent protein kinases regulate protein tyrosine phosphorylation in stallion sperm.](#)
  - [XAF1 contributes to dengue virus-induced apoptosis in vascular endothelial cells.](#)
  - [Insulin-like growth factor binding protein 7, a member of insulin-like growth factor signal pathway, involved in immune response of small abalone Haliotis diversicolor.](#)
  - [Insulin-like growth factor 1 enhances the proliferation and osteogenic differentiation of human periodontal ligament stem cells via ERK and JNK MAPK pathways.](#)
  - [Reversal of cocaine-conditioned place preference through methyl supplementation in mice: altering global DNA methylation in the prefrontal cortex.](#)
  - [Dentinogenic capacity: immature root papilla stem cells versus mature root pulp stem cells.](#)
  - [Levels of Rabs and WAVE family proteins associated with translocation of GLUT4 to the cell surface in endometria from hyperinsulinemic PCOS women.](#)