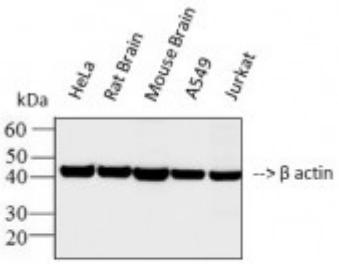
Anti-beta-actin antibody



Western Blot (WB) analysis of 1)HeLa, 2)Rat Brain, 3)Mouse Brain, 4)A549, 5)Jurkat using β actin antibody(STJ96930).

Description	Beta actin is a cytoskeletal protein of the actin family, which is approximately 41,7 kDa and localised to the cytoplasm. It is encoded by the ACTB gene and is involved in pathways such as blood-brain barrier and immune cell transmigration, regulation of actin cytoskeleton by Rho GTPases and development Slit-Robo signalling. Beta actin is one of 3 main groups of actin isoforms in vertebrates namely for which alpha and gamma actins are the other two. Beta actin is a highly conserved proteins that is involved in various types of internal cell motility and are the major constituent of microfilaments and it is ubiquitously expressed in all eukaryotic cells. Mutations in the ACTB gene can result in a form of juvenile-onset dystonia, which is defined by the presence of sustained involuntary muscle contraction - often leading to abnormal postures. Another disease, Baraitser-Winter syndrome 1, is also caused by ACTB mutation. This is rare developmental disorder that causes postnatal short stature and microcephaly, intellectual disability, seizures, and hearing loss. STJ96930 was developed to target endogenous beta actin, and is affinity-purified from mouse ascites by affinity-chromatography.
Model	STJ96930
Host	Mouse
Reactivity	Avian, Canine, Hamster, Human, Insect, Mouse, Rabbit, Rat, Simian
Applications	FC, IHC, WB
Immunogen	Synthetic Peptide
Immunogen Region	C-term
Gene ID	60

Gene Symbol	ACTB
Dilution range	WB 1:5000IHC 1:200
Specificity	The antibody detects endogenous beta-actin protein.
Purification	The antibody was affinity-purified from mouse ascites by affinity-chromatography using specific immunogen.
Clone ID	5B7
Note	For Research Use Only (RUO).
Protein Name	Actin, cytoplasmic 1 Beta-actin Actin, cytoplasmic 1, N-terminally processed
Clonality	Monoclonal
Conjugation	Unconjugated
Isotype	IgG1
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:132OMIM:102630
Alternative Names	Actin, cytoplasmic 1 Beta-actin Actin, cytoplasmic 1, N-terminally processed
Function	Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.
Cellular Localization	Cytoplasm, cytoskeleton. Localized in cytoplasmic mRNP granules containing untranslated mRNAs.
Post-translational Modifications	ISGylated. Oxidation of Met-44 and Met-47 by MICALs (MICAL1, MICAL2 or MICAL3) to form methionine sulfoxide promotes actin filament depolymerisation. MICAL1 and MICAL2 produce the (R)-S-oxide form. The (R)-S-oxide form is reverted by MSRB1 and MSRB2, which promote actin repolymerisation. Monomethylation at Lys-84 (K84me1) regulates actin-myosin interaction and actomyosin-dependent processes. Demethylation by ALKBH4 is required for maintaining actomyosin dynamics supporting normal cleavage furrow ingression during cytokinesis and cell migration. (Microbial infection) Monomeric actin is cross-linked by V.cholerae toxins RtxA and VgrG1 in case of infection: bacterial toxins mediate the cross-link between Lys-50 of one monomer and Glu-270 of another actin monomer, resulting in formation of highly toxic actin oligomers that cause cell rounding. The toxin can be highly efficient at very low concentrations by acting on formin homology family proteins: toxic actin oligomers bind with high affinity to formins and adversely affect both nucleation and elongation abilities of formins, causing their potent inhibition in both profilin-dependent and independent manners.