

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects a synthetic peptide specific for mouse beta-actin around amino acid 50 in Direct ELISA.
Source	Monoclonal Rat IgG _{2A} Clone # 1104805
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Synthetic Peptide Accession # P60710
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Beta actin (ACTB) is a canonical member of the actin family of proteins, with a molecular weight of approximately 42 kDa. Actins are highly conserved proteins that play pivotal roles in various cellular processes, including the maintenance of the cytoskeleton and cell motility, division, and signaling. ACTB is ubiquitously expressed in all eukaryotic cells and is crucial for structural integrity and motility. It is involved in essential biological processes such as cellular trafficking and the maintenance of cell shape and polarity. Dysregulation of ACTB expression or function can lead to notable pathologies, including cancer progression, where it is implicated in tumor cell migration, invasion, and metastasis. Mutations in the ACTB gene are also associated with developmental disorders and conditions like Baraitser-Winter syndrome. Additionally, ACTB plays a critical role in intracellular transport processes and the functioning of the actin cytoskeleton, highlighting its potential as a biomarker for various diseases and a target for therapeutic interventions.

References:

1. Pollard, T. D., & Cooper, J. A. (2009). Actin, a central player in cell shape and movement. *Science*, 326(5957), 1208-1212. doi: 10.1126/science.1175862.
2. Perrin, B. J., & Ervasti, J. M. (2010). The actin gene family: Function follows isoform. *Cytoskeleton*, 67(10), 630-634. doi: 10.1002/cm.20475.
3. Jones, S. L., Korobova, F., Svitkina, T. (2019). Origin of the actin cytoskeleton. *Nature Reviews Molecular Cell Biology*, 20(11), 675-689. doi: 10.1038/s41580-019-0164-5.

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