

**DESCRIPTION**

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects a synthetic peptide specific for mouse beta-actin around amino acid 50 in Direct ELISA.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 1104805
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Synthetic Peptide Accession # P60710
<b>Conjugate</b>	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
<b>Formulation</b>	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.

<b>Western Blot</b>	Optimal dilution of this antibody should be experimentally determined.
<b>Immunocytochemistry</b>	Optimal dilution of this antibody should be experimentally determined.
<b>Immunohistochemistry</b>	Optimal dilution of this antibody should be experimentally determined.

**PREPARATION AND STORAGE**

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	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.

**PRODUCT SPECIFIC NOTICES**

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.