

# PRODUCT INFORMATION

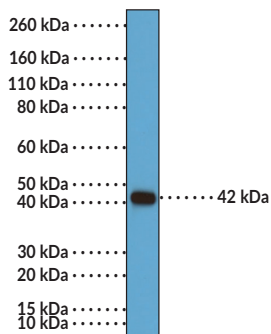
## $\beta$ -Actin (N-Term) Rabbit Monoclonal Antibody - Biotinylated (Clone RM112)

Item No. 32377

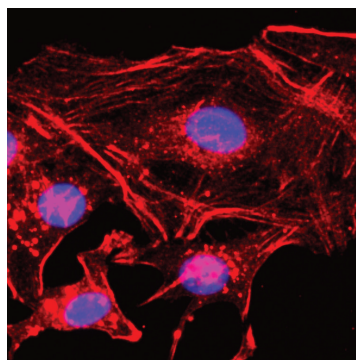
### Overview and Properties

<b>Contents:</b>	This vial contains 50 $\mu$ l of protein A-affinity purified monoclonal antibody.
<b>Synonyms:</b>	Actin $\beta$ , Actin, Cytoplasmic 1, $\beta$ -Cytoskeletal Actin
<b>Immunogen:</b>	Peptide from the N-terminal region of $\beta$ -actin
<b>Species Reactivity:</b>	Species Independent
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	$\geq 1$ year
<b>Storage Buffer:</b>	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
<b>Clone:</b>	RM112
<b>Host:</b>	Rabbit
<b>Isotype:</b>	IgG
<b>Applications:</b>	Chromatin Immunoprecipitation (ChIP), Immunocytochemistry (ICC), Immunohistochemistry (IHC), Immunoprecipitation (IP), and Western blot (WB); the recommended starting dilution is 1:200 for ChIP, ICC, and IP, 1:200-1:1,000 for IHC, and 1:1,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

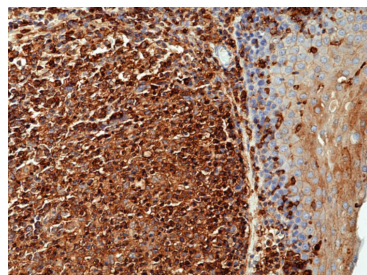
### Images



WB of A431 cells using  $\beta$ -Actin (N-Term) Rabbit Monoclonal Antibody - Biotinylated (Clone RM112) at a dilution of 1:1000.



Immunofluorescent labeling of HeLa cells labeled with  $\beta$ -Actin (N-Term) Rabbit Monoclonal Antibody - Biotinylated (Clone RM112) (red) at a dilution of 1:200. Nuclei have been labeled with



Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue using  $\beta$ -Actin (N-Term) Rabbit Monoclonal Antibody - Biotinylated (Clone RM112) at a 1:1,000 dilution.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

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$\beta$ -Actin is a cytoskeletal protein with roles in cell division, migration, and homeostasis that is encoded by *ACTB* in humans.<sup>1,2</sup> It is ubiquitously expressed, localized to the cytosol, and conserved from birds to mammals.  $\beta$ -Actin is enriched at the leading edge of migrating cells and *Actb*<sup>-/-</sup> mouse embryonic fibroblasts (MEFs) exhibit decreased migration velocity, increased apoptosis, and decreased proliferation.<sup>1</sup> *Actb* knockout is early embryonic lethal in mice, indicating that  $\beta$ -actin is essential for embryonic development. *ACTB*<sup>R183W</sup> and *ACTB*<sup>E346K</sup> gain-of-function mutations have been found in patients with deafness, developmental mutations, and juvenile-onset dystonia and neutrophil dysfunction, respectively.<sup>3</sup> Cayman's  $\beta$ -Actin (N-Term) Rabbit Monoclonal Antibody - Biotinylated (Clone RM112) can be used for chromatin immunoprecipitation (ChIP), immunocytochemistry (ICC), immunohistochemistry (IHC), immunoprecipitation (IP), and Western blot (WB) applications.

## References

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1. Bunell, T.M., Burbach, B.J., Shimizu, Y., *et al.*  $\beta$ -Actin specifically controls cell growth, migration, and the G-actin pool. *Mol. Biol. Cell* **22**(21), 4047-4058 (2011).
2. Vedula, P., Kurosaka, S., Leu, N.A., *et al.* Diverse functions of homologous actin isoforms are defined by their nucleotide, rather than their amino acid sequence. *Elife* **6**, e31661 (2017).
3. Hundt, N., Preller, M., Swolski, O., *et al.* Molecular mechanisms of disease-related human  $\beta$ -actin mutations p.R183W and p.E364K. *FEBS J.* **281**(23), 5279-5291 (2014).

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