

Purified anti- β -actin Antibody

Catalog# / Size	643801 / 25 μ g 643802 / 100 μ g
Clone	2F1-1
Regulatory Status	RUO
Other Names	Actin, cytoplasmic 1
Isotype	Mouse IgG2b, κ
Description	β -actin is a ubiquitously expressed and highly conserved 42 kD cytoplasmic protein involved in cell motility. This critical cytoskeletal component can be disrupted by drugs such as cytochalasin. Because β -actin is ubiquitously expressed in all eukaryotic cells, it is frequently used as a loading control for assays involving protein detection (such as Western blotting).

Product Details

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	WB - Quality tested ICC, IHC-P - Verified
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting . Western blotting, suggested working dilution(s): Use 10 μ L per 5 mL antibody dilution buffer for each mini-gel. For immunocytochemistry, a concentration range of 1.0 - 5.0 μ g/mL is recommended. For immunohistochemistry, a concentration range of 5 - 10 μ g/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	The binding of this antibody to its target is sensitive to salt concentration. For consistent results, please use TBS/T buffer for Western blotting that contains 0.15 M NaCl as indicated in the BioLegend recommended protocol .
Application References	<ol style="list-style-type: none">1. Lawson BR, <i>et al.</i> 2007. <i>J. Immunol.</i> 178:5366.2. Joyce CW, <i>et al.</i> 2006. <i>J. Biol. Chem.</i> 281:33053.3. Yanagiya T, <i>et al.</i> 2007. <i>Obesity.</i> 15:572.4. Kishida T, <i>et al.</i> 2007. <i>J. Immunol.</i> 179:8554.5. Quimet M, <i>et al.</i> 2008. <i>Arterioscler Thromb Vasc Biol.</i> 28:1144.6. Toltit LJ, <i>et al.</i> 2008. <i>J. Immunol.</i> 181:2165.7. Sawada T, <i>et al.</i> 2008. <i>J. Biol. Chem.</i> 283:26820.8. Ikeda D, <i>et al.</i> 2008. <i>Endocrinology.</i> 149:6037.9. Ikeda Y, <i>et al.</i> 2010. <i>Mol Endocrinol.</i> 24:1338. PubMed10. Kaieda S, <i>et al.</i> 2010. <i>J. Biol Chem.</i> 285:21478. PubMed11. Cambos M, <i>et al.</i> 2011. <i>J. Leukoc. Biol.</i> 89:157. PubMed
Product Citations	<ol style="list-style-type: none">1. Xu Y, <i>et al.</i> 2022. <i>Nat Commun.</i> 13:980. PubMed2. Sugimoto C, <i>et al.</i> 2022. <i>Elife.</i> 11:. PubMed3. Kaya-Sezginer E, <i>et al.</i> 2022. <i>Andrology.</i> 10:1441. PubMed4. Greenberg D, <i>et al.</i> 2015. <i>Infect Immun.</i> 83: 4277 - 4292. PubMed5. Sims S, <i>et al.</i> 2021. <i>Adv Virol.</i> 2021:5569844. PubMed6. Callahan SM, <i>et al.</i> 2021. <i>Curr Protoc.</i> 1:e294. PubMed7. Rodriguez E, <i>et al.</i> 2022. <i>Commun Biol.</i> 5:41. PubMed

8. Hadjicharalambous MR, *et al.* 2019. *Sci Rep.* 9:6020. [PubMed](#)
9. Kaieda S, *et al.* 2010. *J Biol Chem.* 285:21478. [PubMed](#)
10. Callahan S, *et al.* 2020. *Cell Microbiol.* 22:e13210. [PubMed](#)
11. Hsiao CC, *et al.* 2021. *Cells.* 10: [PubMed](#)
12. Budida R, *et al.* 2017. *Eur J Immunol.* 47:1819. [PubMed](#)
13. Bruggen R, *et al.* 2015. *PLoS One.* 10: 0144555. [PubMed](#)
14. Scorza M 2011. *J Leukoc Biol.* 89:159. [PubMed](#)
15. Lovatt M, *et al.* 2018. *Antioxidants (Basel).* 0.416666667. [PubMed](#)
16. Lai CC, *et al.* 2022. *Biomed Rep.* 16:19. [PubMed](#)
17. Kakaradov B, *et al.* 2017. *Nat Immunol.* 18:422. [PubMed](#)
18. Nagatake T, *et al.* 2018. *J Allergy Clin Immunol.* 142:470. [PubMed](#)
19. Ikeda Y, *et al.* 2010. *Mol Endocrinol.* 24:1338. [PubMed](#)
20. Wagner AK, *et al.* 2017. *Nat Commun.* 8:15627. [PubMed](#)
21. Qin S, *et al.* 2018. *Oncol Lett.* 128:1283. [PubMed](#)
22. Lalor R, *et al.* 2019. *Nutrients.* 11. [PubMed](#)

RRID AB_2223201 (BioLegend Cat. No. 643801)
 AB_2223199 (BioLegend Cat. No. 643802)

Antigen Details

Structure	Actin, cytoplasmic 1
Distribution	Ubiquitously expressed in the cytoplasm of all eukaryotic cells
Function	Actins are highly conserved proteins that are involved in cell motility
Biology Area	Cell Biology, Neuroscience, Neuroscience Cell Markers
Molecular Family	Microfilaments
Antigen References	<ol style="list-style-type: none"> 1. Hanukoglu I, <i>et al.</i> 1983. <i>J. Mol. Biol.</i> 163:673. 2. Nakajima-Iijima S, <i>et al.</i> 1985. <i>Proc. Natl. Acad. Sci.</i> 82:6133. 3. Ponte P, <i>et al.</i> 1984. <i>Nucleic Acids Res.</i> 12:1687.
Gene ID	11461

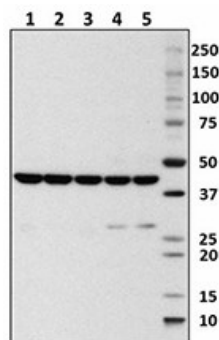
Related Protocols

[Western Blotting Protocol](#)

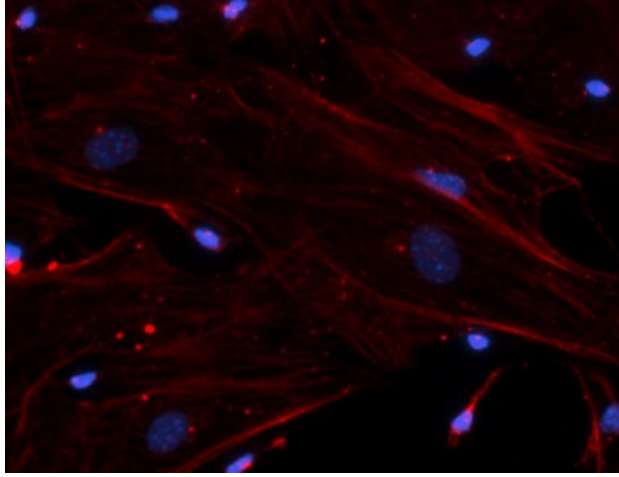
Other Formats

Alexa Fluor® 594 anti-β-actin, Purified anti-β-actin, Brilliant Violet 421™ anti-β-actin, Direct-Blot™ HRP anti-β-actin, Alexa Fluor® 647 anti-β-actin, Alexa Fluor® 488 anti-β-actin

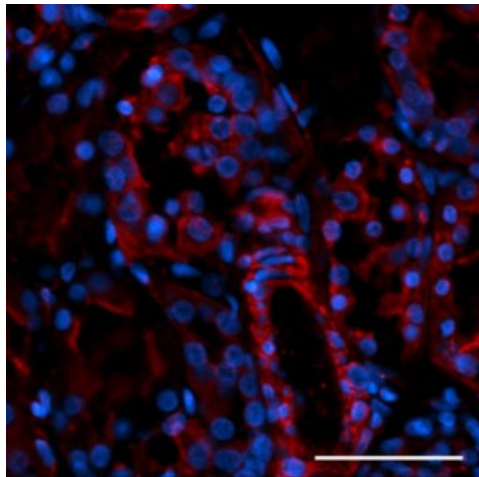
Product Data



Total cell lysate from HeLa cells (lane 1, 15 µg), NIN3T3 cells (lane 2, 15 µg), U87-MG (lane 3, 15 µg), mouse brain (lane 4, 15 µg) and rat brain (lane 5, 15 µg) were resolved by electrophoresis (4-20% Tris-Glycine gel), transferred to nitrocellulose, and probed with purified anti-β actin antibody (clone 2F1-1). Proteins were visualized using an HRP Goat anti-mouse IgG Antibody and chemiluminescence detection.



Day-three cultured postnatal C57BL/6 mouse brain cells were fixed with 1% paraformaldehyde (PFA) for 10 minutes, permeabilized with 0.5% Triton X-100 for 10 minutes, and blocked with 5% FBS for 30 minutes. Then the cells were intracellularly stained with 2.5 $\mu\text{g}/\text{ml}$ of purified anti- β -actin (clone 2F1-1) in blocking buffer, overnight at 4°C, followed by Alexa Fluor® 594 anti-mouse IgG (red) staining for 2 hours at 4°C. Nuclei were counterstained with DAPI (blue). The image was captured with 40X objective.



IHC staining using purified anti- β -actin antibody (clone 2F1-1) on formalin-fixed paraffin-embedded human kidney tissue. The tissue was incubated with 5 $\mu\text{g}/\text{mL}$ of anti- β -actin antibody overnight at 4°C, followed by incubation with 2.5 $\mu\text{g}/\text{mL}$ of Alexa Fluor® 647 goat anti-mouse IgG antibody (red) (Cat. No. 405322) for one hour at room temperature. Nuclei were counterstained with DAPI (blue) (Cat. No. 422801), and the slide was mounted with ProLong™ Gold Antifade Mountant. The image was captured with a 40x objective. Scalebar = 50 μM .

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587