abcam

ab205

Anti-F-actin antibody [NH3]

Anti-F-actin antibody [NH3] (ab205) is a mouse monoclonal antibody detecting F-actin in **Western Blot, Flow Cytometry, IHC-Fr, ICC/IF, ELISA**. Suitable for **Human, Mouse, Rabbit, Rat**.

- Over 120 publications
- Trusted since 1999

Key facts

Isotype	IgM
Host species	Mouse
Storage buffer	Preservative: 0.1% Sodium azide
Form	Liquid
Clonality	Monoclonal
Clone number	NH3
Purity	IgM fraction
Specificity	Clone NH3 recognises human Filamentous actin (F-actin) and reportedly also recognizes Globular actin (G-actin). The antibody binds to the N-terminal region of actin, but not to the extreme N-terminal 40 amino acids. In tissue sections the antibody stains the cytoplasm of macrophages strongly, and gives granular, localised nuclear staining of all cell types. As this is a mouse IgM antibody, an anti-mouse IgM secondary antibody must be used to detect this primary.
Epitope	This antibody is reported to recognise actin in the filamentous form with the epitope likely to be located between residues 120 and 226 of the molecule.
Light chain type	unknown
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified IgM prepared from tissue culture supernatant.

Reactivity data

Flow Cyt

Expected

Species	Mouse
Dilution info	-
Notes	ab91545 - Mouse monoclonal IgM, is suitable for use as an isotype control with this antibody.

Species	Rat
Dilution info	-
Notes	ab91545 - Mouse monoclonal IgM, is suitable for use as an isotype control with this antibody.

Species	Human
Dilution info	-
Notes	ab91545 - Mouse monoclonal IgM, is suitable for use as an isotype control with this antibody.

Species	Rabbit
Dilution info	-
Notes	ab91545 - Mouse monoclonal IgM, is suitable for use as an isotype control with this antibody.

ELISA

Expected

Species	Mouse, Rat, Human, Rabbit
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	As this is a mouse IgM antibody, an anti-mouse IgM secondary antibody must be used to detect this primary.

Expected

Species	Mouse
Dilution info	1/100 - 1/500
Notes	As this is a mouse IgM antibody, an anti-mouse IgM secondary antibody must be used to detect this primary.

Species	Rat
Dilution info	1/100 - 1/500
Notes	As this is a mouse IgM antibody, an anti-mouse IgM secondary antibody must be used to detect this primary.

Species	Rabbit
Dilution info	1/100 - 1/500
Notes	As this is a mouse IgM antibody, an anti-mouse IgM secondary antibody must be used to detect this primary.

IHC-R

Expected

Species	Mouse, Rat, Human, Rabbit
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Expected

Species	Mouse, Rat, Human, Rabbit
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-Fr

Expected

Species	Mouse, Rat, Human, Rabbit
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information ACTB

Function	Actin is a highly conserved protein that polymerizes to produce filaments that form cross-linked networks in the cytoplasm of cells (PubMed:25255767, PubMed:29581253). Actin exists in both monomeric (G-actin) and polymeric (F-actin) forms, both forms playing key functions, such as cell motility and contraction (PubMed:29581253). In addition to their role in the cytoplasmic cytoskeleton, G- and F-actin also localize in the nucleus, and regulate gene transcription and motility and repair of damaged DNA (PubMed:29925947). Plays a role in the assembly of the gamma-tubulin ring complex (gTuRC), which regulates the minus-end nucleation of alpha-beta tubulin heterodimers that grow into microtubule protafilaments (PubMed:39321809, PubMed:38609661). Part of the ACTR1A/ACTB filament around which the dynactin complex is built (By similarity). The dynactin multiprotein complex activates the molecular motor dynein for ultra-processive transport along microtubules (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Product Specifications

Anti-F-actin antibody [NH3] (ab205) is a mouse monoclonal antibody and is validated for use in ELISA, Flow Cyt, ICC/IF, IHC-Fr, IHC-R, IP, WB in human, mouse, rabbit, rat samples.
Anti-F-actin antibody [NH3] (ab205) specifically detects F-actin (UniProt ID: P60709; Molecular weight: 42kDa) and is sold in 250 µg selling sizes.

Quality and Validation

Abcam's high quality validation processes ensure Anti-F-actin antibody [NH3] (ab205) has high sensitivity and specificity.
Anti-F-actin antibody [NH3] (ab205) has been cited over 126 times in peer reviewed journals and is trusted by the scientific community.
Anti-F-actin antibody [NH3] (ab205) has 11 independent reviews from customers.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	F-actin also known as filamentous actin is an essential structural protein found within the cytoskeleton of eukaryotic cells. Its alternate names include actin filaments or microfilaments. The protein consists of polymerized monomers of G-actin each with a molecular weight of roughly 42 kDa. F-actin is expressed abundantly in muscle cells and non-muscle cells alike providing structural support and facilitating cellular movements. Actin staining is a common method used in labs to visualize these dynamic structures often employing phalloidin staining a toxin that stabilizes actin filaments conjugated with fluorescent labels such as Phalloidin 594 Phalloidin 647 or Phalloidin 488 for imaging purposes.
Biological function summary	The actin cytoskeleton plays integral roles in maintaining cell shape providing mechanical resistance against deformation and driving important cellular processes such as endocytosis cell division and motility. F-actin forms part of numerous protein complexes interacting with other proteins like myosin to facilitate muscle contraction and cellular transport. Within cells F-actin is dynamic readily polymerizing and depolymerizing in response to cellular signaling making it essential for cytoskeletal remodeling and cellular adaptability.
Pathways	F-actin is central to various signaling cascades underlying processes like cell signaling and intracellular transport. Notably it participates in the Rho family GTPase pathway affecting cell cytoskeleton organization and motility. It also interacts with proteins like cofilin and profilin which regulate actin polymerization and treadmilling dynamics respectively. These interactions highlight F-actin's involvement in complex cellular pathway regulation processes essential for maintaining cellular homeostasis and adaptability.
Associated diseases and disorders	Abnormal regulation or mutations in actin-related proteins can lead to conditions such as cancer and cardiomyopathies. For example during metastasis cancer cells exploit the dynamic nature of F-actin for enhanced migratory capacity. In cardiac muscle cells actin interacts with other proteins like tropomyosin and mutations in these genes can disrupt normal heart function leading to cardiomyopathies. As such F-actin not only represents a critical component of the cellular structure but

also serves as a pivotal target for understanding disease mechanisms and potential therapeutic intervention points.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

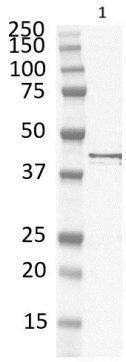
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

3 product images



Western blot - Anti-F-actin antibody [NH3] (ab205)

F-actin Western blot staining of HeLa whole cell lysate using mouse Anti-F-actin antibody

All lanes:
Western blot - Anti-F-actin antibody [NH3] (ab205)

All lanes:
HeLa whole cell lysate

Secondary

All lanes:
HRP conjugated Rabbit F(ab')2 anti Mouse IgG (Human Adsorbed) at 1/2000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 40 kDa

Exposure time: 22s

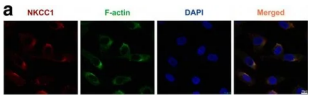


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Immunocytochemistry/ Immunofluorescence - Anti-F-actin antibody [NH3] (ab205)

F-actin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-F-actin antibody

F-actin immunocytochemistry-immunofluorescence using Anti-F-actin antibody [NH3] ab205. Publication image and figure legend from Luo, W. D., Min, J. W., et al., 2018, Journal of Neuroinflammation PubMed 29925377.

Vitexin downregulated F-actin expression in RBMECs after OGD. FITC-conjugated phalloidin staining for F-actin+ stress fiber formation demonstrated changes in cytoskeletal assembly following OGD in RBMECs. a Confocal images show co-localization of NKCC1 and F-actin in RBMECs. Scale bar = 10 μm. b Merged views of indicated NKCC1 show complete co-localization (b, left). A side overlap of two peaks was taken as a partial co-localization (b, right). c Pearson's correlation coefficient is shown in graph (c) from five independent experiments analyzed. d, e The distribution of F-actin+ stress fibers was shown by confocal imaging in Control, OGD, OGD+Bum, and OGD+Vit groups. Arrows indicate actin stress fiber formation. The intensity of F-actin fluorescence was determined in 10 fields/well and divided by the number of cells counterstained with DAPI. Each experimental group consisted of three replicates. Scale bar = 10 μm

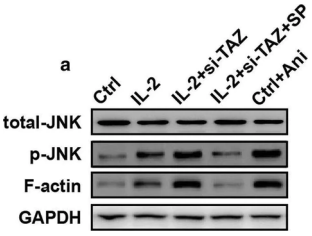


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Western blot - Anti-F-actin antibody [NH3] (ab205)

F-actin Western blot staining using mouse Anti-F-actin antibody

F-actin western blot using Anti-F-actin antibody [NH3] ab205. Publication image and figure legend from Ji, K., Lin, K., et al., 2018, Cancer Cell International, PubMed 30127666.

TAZ modulates mitochondrial fission via the JNK/F-actin pathway. a-c Western blotting was used to analyze JNK activity and F-actin expression. IL-2 treatment promoted JNK phosphorylation and F-actin upregulation; this effect was further enhanced by TAZ deletion. To inhibit the activity of JNK, SP600125 (SP) was added to TAZ-depleted cells. To activate the JNK pathway, anisomycin (Ani) was added to control cells. d, e Immunofluorescence staining of phosphorylated JNK following TAZ deletion and IL-2 treatment. f, g Immunofluorescence staining for F-actin following JNK activation or inhibition. h, i Immunofluorescence staining of mitochondria. The average number of mitochondria was recorded. *p < < 0.05 vs. control (Ctrl) group; #p < < 0.05 vs. IL-2 group; @p < < 0.05 vs. IL-2 + si-TAZ group

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.