abcam

ab267526

# Alexa Fluor® 488 Anti-beta Actin antibody [SP124] - Cytoskeleton Marker

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Conjugation** | Alexa Fluor® 488 |
| **Excitation/Emission** | Ex: 495nm, Em: 519nm |
| **Storage buffer** | pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | SP124 |
| **Purification technique** | Affinity purification Protein A/G |
| **Specificity** | The immunogen used for this product shares 71% homology with Gamma actin/actin cytoplasmic 2 and 64% homology with cardiac, smooth, and skeletal muscle actin. Cross-reactivity with these proteins has not been confirmed experimentally. |
| **Concentration** | 0.5 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/100 |
| **Notes** | This product gave a positive signal in NIH/3T3 fixed with 100% methanol (5 min). |

### Expected

| | |
|---|---|
| **Species** | Human, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## Flow Cyt (Intra)

### Expected

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

## IHC-P

### Expected

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **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, Stable for 12 months at -20°C, Store in the dark |

## Notes

**Patented technology**
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Alexa Fluor® is a registered trademark of Molecular Probes, Inc, a Thermo Fisher Scientific Company. The Alexa Fluor® dye included in this product is provided under an intellectual property license from Life Technologies Corporation. As this product contains the Alexa Fluor® dye, the purchase of this product conveys to the buyer the non-transferable right to use the purchased product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). As this product contains the Alexa Fluor® dye the sale of this product is expressly conditioned on the buyer not using the product or its components, or any materials made using the product or its components, in any activity to generate revenue, which may include, but is not limited to use of the product or its components: in manufacturing; (ii) to provide a service, information, or data in return for payment (iii) for therapeutic, diagnostic or prophylactic purposes; or (iv) for resale, regardless of whether they are sold for use in research. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, 5781 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@thermofisher.com.

## Supplementary info

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

| | |
|---|---|
| **Activity summary** | Beta actin also known as beta cytoplasmic actin plays a central role in cell structure and motility. It is part of the actin protein family and is widely expressed in eukaryotic cells. The molecular weight of beta actin is approximately 42 kDa. It contributes to the formation of the cytoskeleton and participates in various cellular processes including movement and stability. Actin is abundant in all cell types providing structural integrity and flexibility. |
| **Biological function summary** | Beta actin contributes to the maintenance of cell shape and is an important player in cell division and muscle contraction. It forms part of a larger actin filaments network often associating with other proteins to form the actin cytoskeleton complex. This complex supports cellular processes such as signaling intracellular trafficking and positioning of organelles. The dynamic polymerization and depolymerization of actin filaments are critical for cellular functions. |

| | |
|---|---|
| **Pathways** | Beta actin functions in the regulation of important biological pathways such as the Rho/Rac/Cdc42 signaling pathway and the Wnt signaling pathway. These pathways are essential in numerous cellular activities including cell morphology and gene transcription. Beta actin closely interacts with proteins like myosin and tropomyosin which facilitate its role in muscle contraction and cell division and proteins such as Rac and Cdc42 which help govern cytoskeletal dynamics and cellular responses to extracellular stimuli. |
| **Associated diseases and disorders** | Beta actin has links to cancers and muscular dystrophies. Aberrations in actin dynamics can result in tumor cell migration and metastasis making it a component of interest in cancer research. Additionally mutations or dysregulation in actin-associated proteins may contribute to muscular dystrophies affecting muscle function and strength. Beta actin's interactions with proteins like dystrophin involved in maintaining muscle integrity further highlight its relevance in both biological functions and disease contexts. |

## 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**

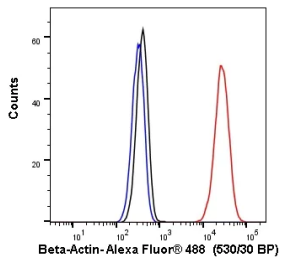
We do not recommend this combination. It is not covered by our product promise.

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.

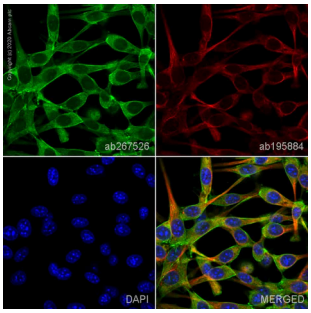
## 2 product images




## Flow Cytometry - Alexa Fluor® 488 Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab267526)

Beta Actin Flow Cytometry staining using rabbit Anti-beta Actin antibody

Overlay histogram showing HeLa cells stained with ab267526 (red line). The cells were fixed with 80 % methanol (5 min) and then permeabilized with 0.1 % PBS-Triton X-100 for 15 min. The cells were incubated in 1x PBS containing 10 % normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab267526) (1x $10^6$ in 100 µL at 1 µg/ml (1/500)) for 30 min at 22°C. Isotype control antibody (black line) was Rabbit IgG (monoclonal) Alexa Fluor 488® (ab199091) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.




## Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-beta Actin antibody [SP124] - Cytoskeleton Marker (ab267526)

Beta Actin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-beta Actin antibody

ab267526 staining beta Actin in NIH3T3 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab267526 at 1/100 dilution (shown in green) and ab195884, Rat monoclonal to Tubulin (Alexa Fluor® 647), at 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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