

Technical Data Sheet

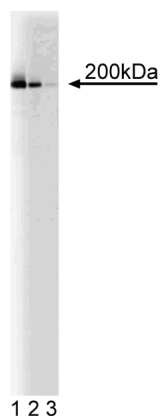
Purified Mouse Anti-KIF1A**Product Information**

| | |
|-------------------------|--|
| Material Number: | 612094 |
| Size: | 50 µg |
| Concentration: | 250 µg/ml |
| Clone: | 16/KIF1A |
| Immunogen: | Mouse KIF1A aa. 902-1015 |
| Isotype: | Mouse IgG1 |
| Reactivity: | QC Testing: Rat Tested in Development: Mouse |
| Target MW: | 200 kDa |
| Storage Buffer: | Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide. |

Description

The ability of the kinesin superfamily of motor proteins to hydrolyze ATP as they move progressively along microtubules is important for organelle transport and cell division. Kinesins are grouped according to the location of the motor domain in the N-terminal, middle, or C-terminal region of the protein. A family of N-terminal motor domain kinesin proteins includes KIF1A/1B, KIF3A/3B, KRP85/95, and Klp68d/64. KIF1A and KIF1B are 93% homologous in their N-terminal motor domains, however KIF1A contains a C-terminal PH domain. KIF1A and KIF1B are expressed in neurons where KIF1A is involved in fast anterograde axon transport of synaptic vesicles, and KIF1B is involved in anterograde axon transport of mitochondria. KIF1A associates with organelles that contain synaptotagmin, synaptophysin, and Rab3A. Disruption of the KIF1A gene in mice causes decreases in synaptic vesicle density, neuronal degeneration, and deficits in motor and sensory function. Thus, KIF1A is a critical brain motor protein involved with axonal transport of synaptic vesicle precursors.

This antibody is routinely tested by western blot analysis. Other applications were tested in BD Biosciences Pharmingen during antibody development only or reported in the literature.



Western blot of analysis of KIF1A on a rat embryonic (E21) cerebrum lysate. Lane 1: 1:500, lane 2: 1:1000, lane 3: 1:2000 dilution of the mouse anti-KIF1A antibody.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. Store undiluted at -20° C.

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Application Notes

Application

| | |
|--------------------|------------------|
| Western blot | Routinely Tested |
| Immunofluorescence | Not Recommended |

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|----------------|------------------------|--------|--------|
| 611463 | Rat Cerebrum Lysate | 500 µg | (none) |
| 554002 | HRP Goat Anti-Mouse Ig | 1.0 ml | (none) |

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Bloom GS. The UNC-104/KIF1 family of kinesins. *Curr Opin Cell Biol.* 2001; 13(1):36-40.(Biology)
Okada Y, Yamazaki H, Sekine-Aizawa Y, Hirokawa N. The neuron-specific kinesin superfamily protein KIF1A is a unique monomeric motor for anterograde axonal transport of synaptic vesicle precursors. *Cell.* 1995; 81(5):769-780.(Biology)
Yonekawa Y, Harada A, Okada Y. Defect in synaptic vesicle precursor transport and neuronal cell death in KIF1A motor protein-deficient mice. *J Cell Biol.* 1998; 141(2):431-441.(Biology)