10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

BICD2 Antibody

Catalog # ASC10720

Product Information

Application	WB, E
Primary Accession	Q8TD16
Other Accession	CAI41013, 57208854
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	93533
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	BICD2 antibody can be used for detection of BICD2 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	23299
Other Names	Protein bicaudal D homolog 2, Bic-D 2, BICD2, KIAA0699
Target/Specificity	BICD2; This BICD2 antibody will not cross-react with BICD1.
Reconstitution & Storage	BICD2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	BICD2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BICD2 (HGNC:17208)
Synonyms	KIAA0699
Function	Acts as an adapter protein linking the dynein motor complex to various cargos and converts dynein from a non-processive to a highly processive motor in the presence of dynactin. Facilitates and stabilizes the interaction between dynein and dynactin and activates dynein processivity (the ability to move along a microtubule for a long distance without falling off the track) (PubMed:25814576). Facilitates the binding of RAB6A to the Golgi by stabilizing its GTP-bound form. Regulates coat complex coatomer protein I (COPI)-independent Golgi- endoplasmic reticulum transport via its interaction with RAB6A and recruitment of the dynein-dynactin motor complex

	(PubMed:25962623). Contributes to nuclear and centrosomal positioning prior to mitotic entry through regulation of both dynein and kinesin-1. During G2 phase of the cell cycle, associates with RANBP2 at the nuclear pores and recruits dynein and dynactin to the nuclear envelope to ensure proper positioning of the nucleus relative to centrosomes prior to the onset of mitosis (By similarity).
Cellular Location	Golgi apparatus. Cytoplasm, cytoskeleton. Cytoplasm. Nucleus envelope. Nucleus, nuclear pore complex. Note=In interphase cells mainly localizes to the Golgi complex and colocalizes with dynactin at microtubule plus ends (By similarity). Localizes to the nuclear envelope and cytoplasmic stacks of nuclear pore complex known as annulate lamellae in a RANBP2-dependent manner during G2 phase of the cell cycle (PubMed:20386726). {ECO:0000250|UniProtKB:Q921C5, ECO:0000269|PubMed:11864968, ECO:0000269|PubMed:20386726}
Tissue Location	Ubiquitous.

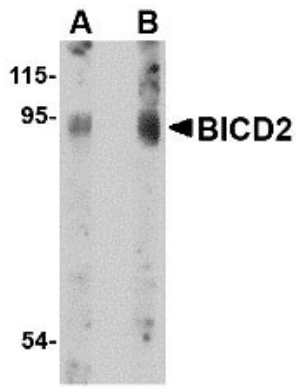
Background

BICD2 Antibody: BICD2 is the second human homolog discovered to the Drosophila Bicaudal-D protein that forms part of the cytoskeleton and mediates the correct sorting of mRNAs for oocyte- and axis-determining factors during oogenesis. Similar to the highly homologous protein BICD1, BICD2 can bind to dynein-dynactin complex, primarily through the dynamitin subunit of dynactin. The C-terminus of BICD2 targets the protein to the Golgi complex while the N-terminal domain of BICD2 co-immunoprecipitates with cytoplasmic dynein, suggesting BICD2 plays a role in the dynein-dynactin interaction on the surface of membranous organelles. Mice engineered to overexpress the BICD2 amino terminal domain in neurons developed amyotrophic lateral sclerosis (ALS)-like features such as Golgi fragmentation, neurofilament swelling in proximal axons, etc., suggesting that impaired dynein/dynactin function may explain some of the pathological features observed in ALS patients.

References

Holland PM, Milne A, Garka K, et al. Purification, cloning, and characterization of Nek8, a novel NIMA-related kinase, and its candidate substrate Bicd2. J. Biol. Chem.2002; 277:16229-40.
Hoogenraad CC, Akhmanova A, Howell SA, et al. Mammalian golgi-associated Bicaudal-D2 functions in the dynein-dynactin pathway by interacting with these complexes. EMBO J.2001; 4041-54.
Teuling E, van Dis V, Wulf PS, et al. A novel mouse model with impaired dynein/dynactin function develops amyotrophic lateral sclerosis (ALS)-like features in motor neurons and improves lifespan in SOD1-ALS mice. Hum. Mol. Genet.2008; 17:2849-62.

Images



Western blot analysis of BICD2 in A549 cell lysate with BICD2 antibody at (A) 1 and (B) 2 µg/mL.

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