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DNAL1 Antibody

Catalog # ASC10738

Product Information

Application	WB, ICC, E
Primary Accession	Q4LDG9
Other Accession	NP_113615, 164607156
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	21533
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	DNAL1 antibody can be used for detection of DNAL1 by Western blot at 1 - 2 g/mL. Antibody can also be used for immunocytochemistry starting at 2.5 g/mL.

Additional Information

Gene ID	83544
Other Names	Dynein light chain 1, axonemal, DNAL1, C14orf168
Target/Specificity	DNAL1;
Reconstitution & Storage	DNAL1 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	DNAL1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DNAL1 (HGNC:23247)
Synonyms	C14orf168
Function	Part of the multisubunit axonemal ATPase complexes that generate the force for cilia motility and govern beat frequency (By similarity). Component of the outer arm dynein (ODA). May be involved in a mechanosensory feedback mechanism controlling ODA activity based on external conformational cues by tethering the outer arm dynein heavy chain (DNAH5) to the microtubule within the axoneme (By similarity). Important for ciliary function in the airways and for the function of the cilia that produce the nodal flow essential for the determination of the left-right asymmetry

(PubMed:21496787).

Cellular Location	Cytoplasm, cytoskeleton, cilium axoneme
Tissue Location	Expressed in tissues carrying motile cilia such as respiratory epithelia, ependyma and testis

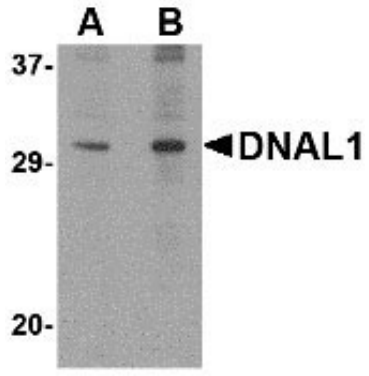
Background

DNAL1 Antibody: DNAL1 was identified as a potential candidate gene for primary ciliary dyskinesia (PCD), a genetically heterologous disorder characterized by chronic infections of the upper and lower airways that often leads to permanent lung damage, randomization of left/right body symmetry, and reduced fertility. DNAL1 is reported to be expressed solely in tissues carrying motile cilia for flagella and interacts with DNAH5, a protein that when mutated has been shown to result in PCD. It has been suggested that DNAL1 serves a regulatory function for DNAH5 activity in outer dynein arms of sperm flagella, respiratory cilia, and ependymal cilia. DNAL1 has also been recently identified as an HIV dependency factor (HDF), suggesting that DNAL1 may be an important drug target in HIV treatment. At least two isoforms of DNAL1 are known to exist.

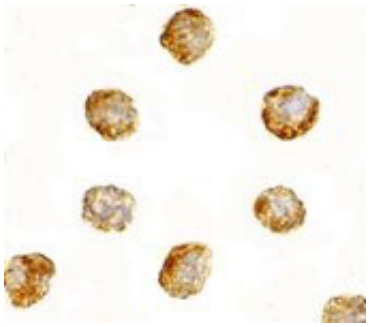
References

Horvath J, Fliegauf M, Olbrich H, et al. Identification and analysis of axonemal dynein light chain 1 in primary ciliary dyskinesia patients. Am. J. Respir. Cell Mol. Biol.2005; 33:41-7.
Olbrich H, Haeffner K, Kisbert A, et al. Mutations in DNAH5 cause primary ciliary dyskinesia and randomization of left/right asymmetry. Nat. Genet.2002; 30:143-4.
Brass AL, Dykxhoorn DM, Benita Y, et al. Identification of host proteins required for HIV infection through a functional genomic screen. Science2008; 319:921-6.

Images



Western blot analysis of DNAL1 in 3T3 cell lysate with DNAL1 antibody at (A) 1 and (B) 2 µg/mL.



Immunocytochemistry of DNAL1 in 3T3 cells with DNAL1 antibody at 2.5 µg/mL.