

DNAI1 Antibody / Dynein axonemal intermediate chain 1 Antibody (FY13597)

Catalog No.	Formulation	Size
FY13597	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	Q9UI46
Applications	Western Blot : 0.5-1ug/ml ELISA : 0.1-0.5 ug/ml
Limitations	The DNAI1 Antibody / Dynein axonemal intermediate chain 1 Antibody is available for research use only.

DNAI1 Antibody by WB in human and rodent samples. Western blot analysis using Dynein axonemal intermediate chain 1 Antibody detects a prominent immunoreactive band near 90 kDa in human Jurkat (lane 1) and SH-SY5Y (lane 2) whole-cell lysates. The calculated molecular weight is approximately 79 kDa. Independent antibody validation has also documented DNAI1 migration above its calculated mass, with bands reported near 80-85 kDa. Reduced samples containing 30 ug protein per lane were separated by 10% SDS-PAGE and transferred to nitrocellulose. After blocking with 5% nonfat milk, the membrane was incubated with primary antibody at 0.5 ug/mL overnight at 4°C. Detection used an HRP-conjugated secondary antibody at 1:5000 and a chemiluminescent substrate. The band positions are described relative to the molecular weight standards in the blot.

Description

DNAI1 Antibody / Dynein axonemal intermediate chain 1 Antibody detects DNAI1, a component of the outer dynein arms that power the movement of motile cilia and flagella. Motile cilia contain an axoneme built from microtubule doublets arranged around a central apparatus in many ciliary types. Dynein motor complexes use energy from ATP hydrolysis to generate sliding forces between adjacent microtubules. Structural constraints convert this sliding into coordinated

bending, allowing cilia to beat rhythmically and move fluid across epithelial surfaces.

DNAI1 contributes to the organization and stability of the outer dynein arm complex rather than serving as its principal ATP-hydrolyzing motor. The complex also contains dynein heavy chains, light chains, and additional intermediate chains. Correct assembly requires specialized cytoplasmic maturation factors and transport of components into the developing cilium. If the outer dynein arms fail to assemble or attach to axonemal microtubules, ciliary beat frequency and waveform can be severely altered. The precise mechanical outcome depends on which structural elements remain intact. The designation Dynein axonemal intermediate chain 1 Antibody refers to the same gene product.

Pathogenic variants in DNAI1 are an established cause of primary ciliary dyskinesia, a disorder characterized by defective motile cilia. Impaired mucociliary clearance can contribute to chronic respiratory infections, while abnormalities in embryonic nodal cilia may affect left-right body patterning. Motile cilia also function in reproductive tissues, making dynein-arm integrity relevant to fertility. DNAI1 is therefore linked to both the microscopic architecture of the axoneme and whole-organism physiological processes. NSJ Bioreagents includes DNAI1 among structural proteins involved in ciliary motility, axonemal assembly, and the coordinated movement of cellular projections. A DNAI1 Antibody can help contextualize the molecular functions and regulation of this protein.

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Application Notes

Optimal working dilutions for the DNAI1 Antibody / Dynein axonemal intermediate chain 1 Antibody should be established experimentally for each assay.

Immunogen

The DNAI1 Antibody was generated using e. coli-derived human DNAI1 recombinant protein (amino acids P78-D649).

Storage

The DNAI1 Antibody is stable for up to one month at 4oC after reconstitution. For longer-term storage, aliquot and store at -20oC for up to six months. Do not repeatedly freeze and thaw.

Alternate Names

DNAI1 antibody, Dynein axonemal intermediate chain 1 antibody, PCD antibody, ICS1 antibody, CILD1 antibody, DNAI1 rabbit polyclonal antibody