

# DNAH3 (D-14): sc-164194

## BACKGROUND

Dyneins are multisubunit, high molecular weight ATPases that interact with microtubules to generate force by converting the chemical energy of ATP into the mechanical energy of movement. Cytoplasmic or axonemal Dynein heavy, intermediate, light and light-intermediate chains are all components of minus end-directed motors; the complex transports cellular cargos towards the central region of the cell. Axonemal dynein motors contain one to three non-identical heavy chains and cause a sliding of microtubules in the axonemes of cilia and flagella in a mechanism necessary for cilia to beat and propel the cell. DNAH3 (dynein, axonemal, heavy chain 3), also known as DNAHC3B, DLP3 or FLJ31947, is a 4,116 amino acid member of the dynein heavy chain protein family. Expressed primarily in testis and trachea, DNAH3 contains 21 LRR repeats. DNAH3 is a force generating protein of respiratory cilia, and is thought to be involved in sperm motility through sperm flagellar assembly.

## REFERENCES

1. Chapelin, C., Duriez, B., Magnino, F., Goossens, M., Escudier, E. and Amselem, S. 1997. Isolation of several human axonemal dynein heavy chain genes: genomic structure of the catalytic site, phylogenetic analysis and chromosomal assignment. *FEBS Lett.* 412: 325-330.
2. Neesen, J., Koehler, M.R., Kirschner, R., Steinlein, C., Kreutzberger, J., Engel, W. and Schmid, M. 1997. Identification of dynein heavy chain genes expressed in human and mouse testis: chromosomal localization of an axonemal dynein gene. *Gene* 200: 193-202.
3. Milisav, I. 1998. Dynein and dynein-related genes. *Cell Motil. Cytoskeleton* 39: 261-272.
4. Milisav, I. and Affara, N.A. 1998. A potential human axonemal dynein heavy-chain gene maps to 17q25. *Mamm. Genome.* 9: 404-407.
5. Maiti, A.K., Mattei, M.G., Jorissen, M., Volz, A., Zeigler, A. and Bouvagnet, P. 2000. Identification, tissue specific expression, and chromosomal localisation of several human dynein heavy chain genes. *Eur. J. Hum. Genet.* 8: 923-932.
6. Carson, J.L., Reed, W., Lucier, T., Brighton, L., Gambling, T.M., Huang, C.H. and Collier, A.M. 2002. Axonemal dynein expression in human fetal tracheal epithelium. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 282: L421-L430.
7. Seetharam, R.N. and Satir, P. 2005. High speed sliding of axonemal microtubules produced by outer arm dynein. *Cell Motil. Cytoskeleton* 60: 96-103.

## CHROMOSOMAL LOCATION

Genetic locus: DNAH3 (human) mapping to 16p12.3; Dnahc3 (mouse) mapping to 7 F2.

## SOURCE

DNAH3 (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DNAH3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-164194 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

DNAH3 (D-14) is recommended for detection of DNAH3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other DNAH family members.

DNAH3 (D-14) is also recommended for detection of DNAH3 in additional species, including equine and canine.

Suitable for use as control antibody for DNAH3 siRNA (h): sc-93362, DNAH3 siRNA (m): sc-143079, DNAH3 shRNA Plasmid (h): sc-93362-SH, DNAH3 shRNA Plasmid (m): sc-143079-SH, DNAH3 shRNA (h) Lentiviral Particles: sc-93362-V and DNAH3 shRNA (m) Lentiviral Particles: sc-143079-V.

Molecular Weight of DNAH3 isoforms: 471/216/86 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.