

# DYDC2 (9H8): sc-134323

## BACKGROUND

The Dumpy-30 (DPY-30) protein was first described in *C. elegans*, in which it is involved in dosage compensation of sex chromosomes. Conserved from yeast to humans, the DPY-30 family is involved in gene expression and chromatin modifications, specifically histone methylation. DPY-30 and closely related proteins contain a short motif that is related to the dimerization motif in the regulatory subunit of protein kinase A (PKA), which consists of two  $\alpha$ -helices that form a four-helix bundle during dimerization. As a member of the DPY-30 family, DYDC2 (DPY30 domain-containing protein 2) is a 177 amino acid protein that may inhibit MTF-1-dependent reporter gene expression. Knockdown of DYDC2 mRNA results in male sterility by impairing sperm motility.

## REFERENCES

- Hsu, D.R. and Meyer, B.J. 1994. The DPY-30 gene encodes an essential component of the *Caenorhabditis elegans* dosage compensation machinery. *Genetics* 137: 999-1018.
- Hsu, D.R., Chuang, P.T. and Meyer, B.J. 1995. DPY-30, a nuclear protein essential early in embryogenesis for *Caenorhabditis elegans* dosage compensation. *Development* 121: 3323-3334.
- Lieb, J.D., de Solorzano, C.O., Rodriguez, E.G., Jones, A., Angelo, M., Lockett, S. and Meyer, B.J. 2000. The *Caenorhabditis elegans* dosage compensation machinery is recruited to X chromosome DNA attached to an autosome. *Genetics* 156: 1603-1621.
- Dong, X., Peng, Y., Peng, Y., Xu, F., He, X., Wang, F., Peng, X., Qiang, B., Yuan, J. and Rao, Z. 2005. Characterization and crystallization of human DPY-30-like protein, an essential component of dosage compensation complex. *Biochim. Biophys. Acta* 1753: 257-262.
- Vardanyan, A., Atanesyan, L., Egli, D., Raja, S.J., Steinmann-Zwicky, M., Renkawitz-Pohl, R., Georgiev, O. and Schaffner, W. 2008. Dumpy-30 family members as determinants of male fertility and interaction partners of metal-responsive transcription factor 1 (MTF-1) in *Drosophila*. *BMC Dev. Biol.* 8: 68.
- Kuhl, A., Melberg, A., Meinel, E., Nürnberg, G., Nürnberg, P., Kehrer-Sawatzki, H. and Jenne, D.E. 2008. Myofibrillar myopathy with arrhythmogenic right ventricular cardiomyopathy 7: corroboration and narrowing of the critical region on 10q22.3. *Eur. J. Hum. Genet.* 16: 367-373.
- Li, S., Qiao, Y., Di, Q., Le, X., Zhang, L., Zhang, X., Zhang, C., Cheng, J., Zong, S., Koide, S.S., Miao, S. and Wang, L. 2009. Interaction of SH3P13 and DYDC1 protein: a germ cell component that regulates acrosome biogenesis during spermiogenesis. *Eur. J. Cell Biol.* 88: 509-520.
- Patel, A., Dharmarajan, V., Vought, V.E. and Cosgrove, M.S. 2009. On the mechanism of multiple lysine methylation by the human mixed lineage leukemia protein-1 (MLL1) core complex. *J. Biol. Chem.* 284: 24242-24256.
- Wang, X., Lou, Z., Dong, X., Yang, W., Peng, Y., Yin, B., Gong, Y., Yuan, J., Zhou, W., Bartlam, M., Peng, X. and Rao, Z. 2009. Crystal structure of the C-terminal domain of human DPY-30-like protein: A component of the histone methyltransferase complex. *J. Mol. Biol.* 390: 530-537.

## CHROMOSOMAL LOCATION

Genetic locus: DYDC2 (human) mapping to 10q23.1.

## SOURCE

DYDC2 (9H8) is a mouse monoclonal antibody raised against recombinant DYDC2 protein of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

DYDC2 (9H8) is recommended for detection of DYDC2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DYDC2 siRNA (h): sc-90816, DYDC2 shRNA Plasmid (h): sc-90816-SH and DYDC2 shRNA (h) Lentiviral Particles: sc-90816-V.

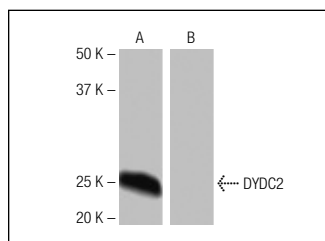
Molecular Weight of DYDC2: 21 kDa.

Positive Controls: human DYDC2 transfected 293T whole cell lysate.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



DYDC2 (9H8): sc-134323. Western blot analysis of DYDC2 expression in human DYDC2 transfected (A) and non-transfected (B) 293T whole cell lysates.

## 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.