

# SMYD3 (C-3): sc-398085

## BACKGROUND

SET and MYND domain-containing 3 (SMYD3), a 428-amino acid protein, is a member of an RNA polymerase complex and plays a role in transcriptional regulation. SMYD3 methylates Lys-4 of Histone H3, a specific tag for epigenetic transcriptional activation. The SMYD3 protein contains an N-terminal MYND-type zinc finger domain, followed by a SET domain, which shows methyltransferase activity. The presence of the heatshock protein HSP 90A greatly enhances SMYD3's methyltransferase activity. SMYD3 is expressed in testis and skeletal muscles and is over-expressed in a majority of colorectal carcinomas (CRCs), hepatocellular carcinomas (HCCs) as well as breast carcinomas (BCs). Inhibition of SMYD3 is a potential chemotherapeutic strategy.

## REFERENCES

1. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608783. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Hamamoto, R., et al. 2004. SMYD3 encodes a histone methyltransferase involved in the proliferation of cancer cells. *Nat. Cell Biol.* 6: 731-740.
3. Ruden, D.M., et al. 2005. HSP 90 and environmental impacts on epigenetic states: a model for the *trans*-generational effects of diethylstilbestrol on uterine development and cancer. *Hum. Mol. Genet.* 14: 149-155.
4. Tsuge, M., et al. 2005. A variable number of tandem repeats polymorphism in an E2F-1 binding element in the 5' flanking region of SMYD3 is a risk factor for human cancers. *Nat. Genet.* 37: 1104-1107.
5. Zhou, Z., et al. 2005. SMYD3-NY, a novel SMYD3 mRNA transcript variant, may have a role in human spermatogenesis. *Ann. Clin. Lab. Sci.* 35: 270-277.

## CHROMOSOMAL LOCATION

Genetic locus: SMYD3 (human) mapping to 1q44; Smyd3 (mouse) mapping to 1 H4.

## SOURCE

SMYD3 (C-3) is a mouse monoclonal antibody raised against amino acids 249-428 mapping at the C-terminus of SMYD3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-398085 X, 200 µg/0.1 ml.

SMYD3 (C-3) is available conjugated to agarose (sc-398085 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398085 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398085 PE), fluorescein (sc-398085 FITC), Alexa Fluor<sup>®</sup> 488 (sc-398085 AF488), Alexa Fluor<sup>®</sup> 546 (sc-398085 AF546), Alexa Fluor<sup>®</sup> 594 (sc-398085 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-398085 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-398085 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-398085 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

SMYD3 (C-3) is recommended for detection of SMYD3 isoforms 1, 2 and 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for SMYD3 siRNA (h): sc-61575, SMYD3 siRNA (m): sc-61576, SMYD3 shRNA Plasmid (h): sc-61575-SH, SMYD3 shRNA Plasmid (m): sc-61576-SH, SMYD3 shRNA (h) Lentiviral Particles: sc-61575-V and SMYD3 shRNA (m) Lentiviral Particles: sc-61576-V.

SMYD3 (C-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

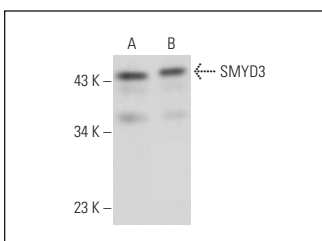
Molecular Weight of SMYD3: 49 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, M1 whole cell lysate: sc-364782 or SMYD3 (h2): 293T Lysate: sc-173215.

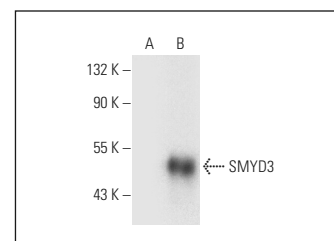
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



SMYD3 (C-3): sc-398085. Western blot analysis of SMYD3 expression in K-562 (A) and M1 (B) whole cell lysates.



SMYD3 (C-3): sc-398085. Western blot analysis of SMYD3 expression in non-transfected: sc-117752 (A) and human SMYD3 transfected: sc-173215 (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.