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Store at -20C
#2996

SET8 (C18B7) Rabbit mAb

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W, IF-IC	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 43	Source/Isotype: Rabbit IgG	UniProt ID: #Q9NQR1	Entrez-Gene Id: 387893
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Product Usage Information

Application

Western Blotting
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

SET8 (C18B7) Rabbit mAb detects endogenous levels of total SET8 protein (both isoforms). The antibody also crossreacts with an unidentified protein at 50kDa.

Species predicted to react based on 100% sequence homology

Bovine, Pig, Horse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to human SET8 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

SET domain-containing lysine methyltransferase 8 (SET8), also known as PR/SET domain-containing protein 7 (PR/SET7), is a member of a family of histone lysine methyltransferases, each of which contains a conserved catalytic SET domain originally identified in *Drosophila* Su[*var*]3-9, Enhancer of zeste, and Trithorax proteins (1-3). SET8 is a single-subunit enzyme that mono-methylates histone H4 on Lys20, preferably on nucleosomal substrates (1-3). SET8 protein levels and Histone H4 Lys20 methylation are cell cycle regulated, both increasing in S phase and peaking at G2/M phase (4,5). SET8 interacts with the PCNA protein, associates with sites of active DNA synthesis, and is required for DNA replication and genome stability during S phase (5-7). Inhibition of SET8 using shRNA or siRNA results in arrest of replication forks, induction of double-stranded DNA breaks, and a Chk1-mediated cell-cycle arrest in S and G2/M phases of the cell cycle (6,7). Furthermore, SET8 methylates p53 on Lys382, down regulating the pro-apoptotic and checkpoint activation functions of p53 (8). In response to DNA damage, SET8 expression levels decrease, allowing p53 to activate checkpoints and/or apoptosis (8). Both the methylation of histone H4 Lys20 and p53 appear to be important for the functions of SET8 in S phase.

Background References

- Fang, J. et al. (2002) *Curr Biol* 12, 1086-99.
- Xiao, B. et al. (2005) *Genes Dev* 19, 1444-54.
- Couture, J.F. et al. (2005) *Genes Dev* 19, 1455-65.
- Rice, J.C. et al. (2002) *Genes Dev* 16, 2225-30.
- Huen, M.S. et al. (2008) *J Biol Chem* 283, 11073-7.
- Tardat, M. et al. (2007) *J Cell Biol* 179, 1413-26.
- Jørgensen, S. et al. (2007) *J Cell Biol* 179, 1337-45.
- Shi, X. et al. (2007) *Mol Cell* 27, 636-46.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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