

SETD2 (D5T1Q) Rabbit mAb

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	290	Rabbit IgG	#Q9BYW2	29072

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

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

SETD2 (D5T1Q) Rabbit mAb recognizes endogenous levels of total SETD2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly1294 of human SETD2 protein.

Background

SET domain-containing protein 2 (SETD2 or SET2), also known as lysine N-methyltransferase 3 A (KMT3A), huntingtin yeast partner B (HYBP), and huntingtin-interacting factor (HIF-1), is a ubiquitously expressed nuclear protein methyltransferase that is responsible for the majority of tri-methylation of histone H3 on lysine 36 (H3K36Me3) (1-3). SETD2-mediated H3K36Me3 is critical for proper regulation of transcription elongation, RNA splicing and DNA mismatch repair (1). SETD2 interacts with RNA polymerase II (RNAPII) that is hyper-phosphorylated on the C-terminal domain (CTD) of the largest subunit Rpb1 (2-4). Upon hyper-phosphorylation of the RNAPII CTD during activation of transcriptional elongation, SETD2 is recruited and facilitates tri-methylation of histone H3 lysine 36 in the body of transcriptionally active genes (2-4). H3K36Me3 then acts to recruit the transcription elongation factor FACT, which modulates nucleosome dynamics to facilitate transcription elongation and prevent cryptic transcriptional initiation (5). In addition, H3K36Me3 acts to recruit RNA-splicing proteins and regulate proper splicing of introns concurrent with transcriptional elongation (3, 6-9). In addition to regulating transcription, SETD2-dependent H3K36Me3 regulates DNA mismatch repair by recruiting MutSα (MSH2 and MSH6) to chromatin during G1 and early S phase (10). Loss of SETD2 results in an increase in microsatellite instability and elevated levels of spontaneous mutations (10). SETD2 is often mutated and/or inactivated in multiple types of cancer, including renal cell carcinoma, leukemia, melanoma and liver cancer (11-13).

Background References

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12. Chopra, M. and Bohlander, S.K. (2015) *Cancer Genet* 208, 192-205.
13. Kudithipudi, S. and Jeltsch, A. (2014) *Biochim Biophys Acta* 1846, 366-79.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

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

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