

Product datasheet

Anti-SET7 antibody ab3826

2 References 1 Image

Overview

Product name	Anti-SET7 antibody
Description	Rabbit polyclonal to SET7
Host species	Rabbit
Specificity	The antibody recognises the Set9 protein in yeast extract and also recognises the recombinant his tagged protein. The band is not detected in the set9 deletion mutant.
Tested applications	Suitable for: WB
Species reactivity	Reacts with: Schizosaccharomyces pombe
Immunogen	Recombinant full length protein of S. pombe SET7/SET9. Read Abcam's proprietary immunogen policy
General notes	Accession NP_588078 (SPCC4B3.12)

This antibody was used to demonstrate that a previously uncharacterized SET domain protein, Set9, is responsible for H4-K20 methylation in the fission yeast Schizosaccharomyces pombe. Surprisingly, H4-K20 methylation does not have any apparent role in the regulation of gene expression or heterochromatin function. Rather, we find the modification has a role in DNA damage response. Loss of Set9 activity or mutation of H4-K20 markedly impairs cell survival after genotoxic challenge and compromises the ability of cells to maintain checkpoint mediated cell cycle arrest. Genetic experiments link Set9 to Crb2, a homolog of the mammalian checkpoint protein 53BP1, and the enzyme is required for Crb2 localization to sites of DNA damage. These results argue that H4-K20 methylation functions as a "histone mark" required for the recruitment of the checkpoint protein Crb2.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.02% Sodium Azide Constituents: 1% BSA, PBS, pH 7.4
Purity	IgG fraction
Primary antibody notes	This antibody was used to demonstrate that a previously uncharacterized SET domain protein, Set9, is responsible for H4-K20 methylation in the fission yeast Schizosaccharomyces pombe.

Surprisingly, H4-K20 methylation does not have any apparent role in the regulation of gene expression or heterochromatin function. Rather, we find the modification has a role in DNA damage response. Loss of Set9 activity or mutation of H4-K20 markedly impairs cell survival after genotoxic challenge and compromises the ability of cells to maintain checkpoint mediated cell cycle arrest. Genetic experiments link Set9 to Crb2, a homolog of the mammalian checkpoint protein 53BP1, and the enzyme is required for Crb2 localization to sites of DNA damage. These results argue that H4-K20 methylation functions as a "histone mark" required for the recruitment of the checkpoint protein Crb2.

Clonality	Polyclonal
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab3826** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/500 - 1/1000. Detects a band of approximately 55 kDa (predicted molecular weight: 55 kDa).

Target

Function Histone methyltransferase that specifically monomethylates 'Lys-4' of histone H3. H3 'Lys-4' methylation represents a specific tag for epigenetic transcriptional activation. Plays a central role in the transcriptional activation of genes such as collagenase or insulin. Recruited by IPF1/PDX-1 to the insulin promoter, leading to activate transcription. Has also methyltransferase activity toward non-histone proteins such as p53/TP53, TAF10, and possibly TAF7 by recognizing and binding the [KR]-[STA]-K in substrate proteins. Monomethylates 'Lys-189' of TAF10, leading to increase the affinity of TAF10 for RNA polymerase II. Monomethylates 'Lys-372' of p53/TP53, stabilizing p53/TP53 and increasing p53/TP53-mediated transcriptional activation. Also able to demethylated 'Lys-372' of p53/TP53 in vitro.

Tissue specificity Widely expressed. Expressed in pancreatic islets.

Sequence similarities Belongs to the histone-lysine methyltransferase family. SET7 subfamily. Contains 3 MORN repeats. Contains 1 SET domain.

Domain The SET domain is necessary but not sufficient for histone methyltransferase activity.

Cellular localization Nucleus. Chromosome.

Images



Western blot - Anti-SETD7 antibody (ab3826)

Steven Sanders, University of Cambridge, UK

Lysate: Fission yeast extract

Lane 1: Wildtype

Lane 2: Set9 deletion

Lane 3: His - 6 - tagged Set9 (1-5 ng).

Dilution of the antibody: 1 /1000.

Size of the band is 55 kDa.

Lysate: Fission yeast extract

Lane 1: Wildtype

Lane 2: Set9 deletion

Lane 3: His - 6 - tagged Set9 (1-5 ng).

Dilution of the antibody: 1 /1000.

Size of the band is 55 kDa.

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