

Product datasheet for KN315625RB

Setd2 Mouse Gene Knockout Kit (CRISPR)

Product data:

OriGene Technologies, Inc.

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Product Type:	Knockout Kits (CRISPR)
Format:	2 gRNA vectors, 1 RFP-BSD donor, 1 scramble control
Donor DNA:	RFP-BSD
Symbol:	Setd2
Locus ID:	235626
Components:	 KN315625G1, Setd2 gRNA vector 1 in pCas-Guide CRISPR vector (GE100002) KN315625G2, Setd2 gRNA vector 2 in pCas-Guide CRISPR vector (GE100002) KN315625RBD, donor DNA containing left and right homologous arms and RFP-BSD functional cassette. GE100003, scramble sequence in pCas-Guide vector
RefSeq:	<u>NM 001081340</u>
UniProt ID:	<u>E9Q5F9</u>
Synonyms:	4921524K10Rik; BC031601; KMT3A



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GRIGENE Setd2 Mouse Gene Knockout Kit (CRISPR) – KN315625RB

Summary:

Histone methyltransferase that specifically trimethylates 'Lys-36' of histone H3 (H3K36me3) using dimethylated 'Lys-36' (H3K36me2) as substrate (PubMed:18157086, PubMed:20133625). Represents the main enzyme generating H3K36me3, a specific tag for epigenetic transcriptional activation (PubMed:18157086, PubMed:20133625). Plays a role in chromatin structure modulation during elongation by coordinating recruitment of the FACT complex and by interacting with hyperphosphorylated POLR2A (By similarity). Acts as a key regulator of DNA mismatch repair in G1 and early S phase by generating H3K36me3, a mark required to recruit MSH6 subunit of the MutS alpha complex: early recruitment of the MutS alpha complex to chromatin to be replicated allows a quick identification of mismatch DNA to initiate the mismatch repair reaction (By similarity). Required for DNA double-strand break repair in response to DNA damage: acts by mediating formation of H3K36me3, promoting recruitment of RAD51 and DNA repair via homologous recombination (HR) (By similarity). Acts as a tumor suppressor (By similarity). H3K36me3 also plays an essential role in the maintenance of a heterochromatic state, by recruiting DNA methyltransferase DNMT3A (By similarity). H3K36me3 is also enhanced in intron-containing genes, suggesting that SETD2 recruitment is enhanced by splicing and that splicing is coupled to recruitment of elongating RNA polymerase (By similarity). Required during angiogenesis (PubMed:20133625). Required for endoderm development by promoting embryonic stem cell differentiation toward endoderm: acts by mediating formation of H3K36me3 in distal promoter regions of FGFR3, leading to regulate transcription initiation of FGFR3 (PubMed:25242323). In addition to histones, also mediates methylation of other proteins, such as tubulins and STAT1 (PubMed:27518565). Trimethylates 'Lys-40' of alpha-tubulins such as TUBA1B (alpha-TubK40me3); alpha-TubK40me3 is required for normal mitosis and cytokinesis and may be a specific tag in cytoskeletal remodeling (PubMed:27518565). Involved in interferon-alphainduced antiviral defense by mediating both monomethylation of STAT1 at 'Lys-525' and catalyzing H3K36me3 on promoters of some interferon-stimulated genes (ISGs) to activate gene transcription (By similarity).[UniProtKB/Swiss-Prot Function]

Product images:



RFP, Luc, and mBFP will be under native gene promoter

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