

Recombinant NSD3 (WHSC1L1)-SET protein

Catalog No: 31477, 31877

Lot No: 26016004

Expressed In: *E. coli*

Quantity: 50, 1000 µg

Concentration: 1 µg/µl

Source: Human

Buffer Contents: Recombinant NSD3 (WHSC1L1)-SET (a.a. 1021-1320) is supplied in 25 mM Tris pH 8.0, 300 mM NaCl, 5% glycerol.

Background: NSD3 (WHSC1L1/Wolf-Hirschhorn Syndrome Candidate 1-Like 1) is a histone methyltransferase of NSD (nuclear receptor binding SET domain protein) family. NSD3 (WHSC1L1) can recognize and methylate several lysine marks if using histone as substrate. However, if using nucleosome as substrate, NSD3 (WHSC1L1) preferentially methylates lysine 36 of histone H3. The NSD3 (WHSC1L1) gene is amplified in several cancers, including lung cancer and head and neck cancer, and may play a role in carcinogenesis.

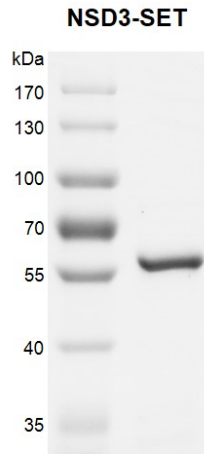
NSD3 (WHSC1L1) includes the SET domain of NSD3 (WHSC1L1). The SET domain is a 130 to 140 amino acid, evolutionary conserved motif that was initially characterized in *Drosophila* proteins Su(var)3-9, EZH2, and TrxG, and plays a crucial role in substrate recognition and enzymatic activity.

Protein Details: Recombinant NSD3 (WHSC1L1)-SET peptide that includes amino acids 1021-1320 that contains the SET domain sequence of the human NSD3 (WHSC1L1) protein (accession number NP_075447.1) was expressed in *E. coli* cells and contains an N-terminal GST-Tag with an observed molecular weight of 60 kDa.

Application Notes: Recombinant NSD3 (WHSC1L1)-SET protein is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

HMT Assay Conditions: 2 µg recombinant nucleosomes were incubated with different concentrations of recombinant NSD3 (WHSC1L1)-SET protein in 30 µl reaction system containing 50 mM TrisCl, pH 8.6, 0.02% Triton X-100, 2 mM MgCl₂, 1 mM TCEP, 50 µM SAM for 3 hours at room temperature. Activity was detected by Western Blot.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



Recombinant NSD3 (WHSC1L1)-SET protein gel.

Recombinant NSD3 (WHSC1L1)-SET protein was run on a 10% SDS-PAGE gel and stained with Coomassie Blue.

MW: 60kDa
Purity: > 90%

NSD3-SET:	1	0	0.5	1	2	1	:ug
Nucleosomes:	0	2	2	2	2	0	
Histone Octamers:	0	0	0	0	0	2	



Recombinant NSD3 (WHSC1L1)-SET activity assay.

2 µg recombinant nucleosomes (Cat. No. 31468) were incubated with NSD3 (WHSC1L1)-SET protein in 30 µl reaction system containing 50 mM Tris-HCl, pH 8.6, 0.02% Triton X-100, 2 mM MgCl₂, 1 mM TCEP, 50 µM SAM for 3 h at RT. 5 µl reaction products were loaded on a 12.5% SDS-PAGE gel. Western Blot was used to detect reaction products (H3K36me₂, Cat. No. 39891). NSD3 (WHSC1L1)-SET only was used as negative control. Results show that the activity of NSD3 (WHSC1L1)-SET with nucleosomes as substrate is much better than its activity with histone octamers as substrate.