SANTA CRUZ BIOTECHNOLOGY, INC.

NSD1 (K47): sc-130470

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The nuclear receptor-binding SET domain-containing protein 1 (NSD1) belongs to a family of proteins which have all been implicated in human malignancy. The protein family includes NSD2 and NSD3, both of which show 70-75% sequence identity with NSD1 but contribute substantially less to overgrowth phenotypes. Defects and microdeletions of the NSD1 gene are involved in Sotos syndrome, childhood acute myeloid leukemia (AML), Weaver syndrome and Beckwith-Wiedemann Syndrome (BWS). The protein functions as a transcriptional intermediary factor capable of influencing transcription, either negatively or positively, depending on the cellular context. NSD1 is a nuclear protein expressed in brain, muscle, spleen, thymus, kidney and, to a lesser extent, lung.

REFERENCES

1. Kurotaki, N., et al. 2001. Molecular characterization of NSD1, a human homologue of the mouse NSD1 gene. Gene 279: 197-204.
2. Rayasam, G.V., et al. 2003. NSD1 is essential for early post-implantation development and has a catalytically active SET domain. EMBO J. 22: 3153-3163.
3. Rio, M., et al. 2003. Spectrum of NSD1 mutations in Sotos and Weaver syndromes. J. Med. Genet. 40: 436-440.
4. Al-Mulla, N., et al. 2004. Cancer in Sotos syndrome: report of a patient with acute myelocytic leukemia and review of the literature. J. Pediatr. Hematol. Oncol. 26: 204-208.
5. Baujat, G., et al. 2004. Paradoxical NSD1 mutations in Beckwith-Wiedemann syndrome and 11p15 anomalies in Sotos syndrome. Am. J. Hum. Genet. 74: 715-720.
6. Cecconi, M., et al. 2005. Mutation analysis of the NSD1 gene in a group of 59 patients with congenital overgrowth. Am. J. Med. Genet. A 134: 247-253.
7. Douglas, J., et al. 2005. Evaluation of NSD2 and NSD3 in overgrowth syndromes. Eur. J. Hum. Genet. 13: 150-153.
8. Tatton-Brown, K., et al. 2005. Multiple mechanisms are implicated in the generation of 5q35 microdeletions in Sotos syndrome. J. Med. Genet. 42: 307-313.

CHROMOSOMAL LOCATION

Genetic locus: NSD1 (human) mapping to 5q35.2.

SOURCE

NSD1 (K47) is a mouse monoclonal antibody raised against a partial recombinant sequence corresponding to the N-terminus of NSD1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NSD1 (K47) is recommended for detection of NSD1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for NSD1 siRNA (h): sc-45612, NSD1 shRNA Plasmid (h): sc-45612-SH and NSD1 shRNA (h) Lentiviral Particles: sc-45612-V.

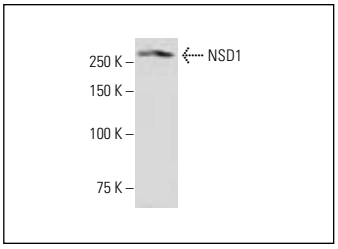
Molecular Weight of NSD1: 284 kDa.

Positive Controls: human uterus extract: sc-363784.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



NSD1 (K47): sc-130470. Western blot analysis of NSD1 expression in human uterus tissue extract.

SELECT PRODUCT CITATIONS

1. Xue, W., et al. 2021. Long non-coding RNAs MACC1-AS1 and FOXD2-AS1 mediate NSD2-induced cisplatin resistance in esophageal squamous cell carcinoma. Mol. Ther. Nucleic Acids. 23: 592-602.
2. Chen, Y., et al. 2021. Nuclear receptor binding SET domain protein 1 promotes epithelial-mesenchymal transition in paclitaxel-resistant breast cancer cells via regulating nuclear factor κB and F-box and leucine-rich repeat protein 11. Bioengineered 12: 11506-11519.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.