

# SUV3 (H-180): sc-135224

## BACKGROUND

SUV3, also known as SUPV3L1 (suppressor of var1, 3-like 1), is a 786 amino acid protein that localizes to both the nucleus and the mitochondrial matrix and contains one helicase C-terminal domain, as well as one helicase ATP-binding domain. Expressed in a broad range of tissues, SUV3 interacts with HBXIP and functions as an ATPase DNA/RNA helicase that uses magnesium as a cofactor to catalyze the unwinding of DNA/RNA and RNA/RNA duplexes, thereby playing a role in DNA replication and transcriptional initiation. SUV3 exhibits optimal activity at a pH of 5 and, in addition to its helicase activity, is thought to protect cells from apoptosis and participate in maintaining mitochondrial homeostasis. The gene encoding SUV3 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome.

## REFERENCES

1. Dmochowska, A., et al. 1998. Assignment1 of SUPV3L1 to human chromosome band 10q22.1 by *in situ* hybridization. *Cytogenet. Cell Genet.* 83: 84-85.
2. Dmochowska, A., et al. 1999. A human putative Suv3-like RNA helicase is conserved between *Rhodobacter* and all eukaryotes. *Acta Biochim. Pol.* 46: 155-162.
3. Minczuk, M., et al. 2002. Localisation of the human hSuv3p helicase in the mitochondrial matrix and its preferential unwinding of dsDNA. *Nucleic Acids Res.* 30: 5074-5086.
4. Minczuk, M., et al. 2005. The 5' region of the human hSUV3 gene encoding mitochondrial DNA and RNA helicase: promoter characterization and alternative pre-mRNA splicing. *Biochim. Biophys. Acta* 1729: 81-87.
5. Szczesny, R.J., et al. 2007. Down-regulation of human RNA/DNA helicase SUV3 induces apoptosis by a caspase- and AIF-dependent pathway. *Biol. Cell* 99: 323-332.
6. Pereira, M., et al. 2007. Interaction of human SUV3 RNA/DNA helicase with BLM helicase; loss of the SUV3 gene results in mouse embryonic lethality. *Mech. Ageing Dev.* 128: 609-617.
7. Bogenhagen, D.F., et al. 2008. The layered structure of human mitochondrial DNA nucleoids. *J. Biol. Chem.* 283: 3665-3675.
8. Khidr, L., et al. 2008. Role of SUV3 helicase in maintaining mitochondrial homeostasis in human cells. *J. Biol. Chem.* 283: 27064-27073.

## CHROMOSOMAL LOCATION

Genetic locus: SUPV3L1 (human) mapping to 10q22.1; Supv3l1 (mouse) mapping to 10 B4.

## SOURCE

SUV3 (H-180) is a rabbit polyclonal antibody raised against amino acids 471-650 mapping within an internal region of SUV3 of human origin.

## STORAGE

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

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-135224 X, 200 µg/0.1 ml.

## APPLICATIONS

SUV3 (H-180) is recommended for detection of SUV3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SUV3 (H-180) is also recommended for detection of SUV3 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for SUV3 siRNA (h): sc-90749, SUV3 siRNA (m): sc-153943, SUV3 shRNA Plasmid (h): sc-90749-SH, SUV3 shRNA Plasmid (m): sc-153943-SH, SUV3 shRNA (h) Lentiviral Particles: sc-90749-V and SUV3 shRNA (m) Lentiviral Particles: sc-153943-V.

SUV3 (H-180) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of SUV3: 87 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **SUV3 (E-1): sc-365750**, our highly recommended monoclonal alternative to SUV3 (H-180).