

SURF-1 (H-7): sc-365159

BACKGROUND

The SURF-1 protein demonstrates a vital role in the assembly of complex IV (CIV or COX) of the mitochondrial respiratory chain. Expressed in the inner mitochondrial membrane, mutations of the SURF-1 gene generally cause cytochrome c oxidase complex IV deficiency. Shortage of complex IV leads to Leigh syndrome, a severe neurological disorder. Leigh syndrome patients are usually subject to rapidly progressive encephalopathy, characterized by necrotic lesions in subcortical brain regions. SURF-1 mutations correlate to high post-implantation embryonic lethality as well as early-onset mortality of post-natal individuals. Considerable deficit in muscle strength and motor performance is also a profound and isolated defect of SURF-1 activity in skeletal muscle and liver. Heart, brain and skeletal muscle morphological abnormalities frequently occur due to SURF-1 mutations.

REFERENCES

1. Tiranti, V., et al. 1998. Mutations of SURF-1 in Leigh disease associated with cytochrome c oxidase deficiency. *Am. J. Hum. Genet.* 63: 1609-1621.
2. Tiranti, V., et al. 1999. Characterization of SURF-1 expression and SURF-1p function in normal and disease conditions. *Hum. Mol. Genet.* 8: 2533-2540.
3. Tiranti, V., et al. 1999. Loss-of-function mutations of SURF-1 are specifically associated with Leigh syndrome with cytochrome c oxidase deficiency. *Ann. Neurol.* 46: 161-166.
4. Vernon, E.G. and Gaston, K. 2000. Myc and YY1 mediate activation of the SURF-1 promoter in response to serum growth factors. *Biochim. Biophys. Acta* 492: 172-179.

CHROMOSOMAL LOCATION

Genetic locus: SURF1 (human) mapping to 9q34.2; Surf1 (mouse) mapping to 2 A3.

SOURCE

SURF-1 (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 127-153 within an internal region of SURF-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SURF-1 (H-7) is available conjugated to agarose (sc-365159 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365159 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365159 PE), fluorescein (sc-365159 FITC), Alexa Fluor® 488 (sc-365159 AF488), Alexa Fluor® 546 (sc-365159 AF546), Alexa Fluor® 594 (sc-365159 AF594) or Alexa Fluor® 647 (sc-365159 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365159 AF680) or Alexa Fluor® 790 (sc-365159 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365159 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SURF-1 (H-7) is recommended for detection of SURF-1 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).

Suitable for use as control antibody for SURF-1 siRNA (h): sc-63090, SURF-1 siRNA (m): sc-63091, SURF-1 shRNA Plasmid (h): sc-63090-SH, SURF-1 shRNA Plasmid (m): sc-63091-SH, SURF-1 shRNA (h) Lentiviral Particles: sc-63090-V and SURF-1 shRNA (m) Lentiviral Particles: sc-63091-V.

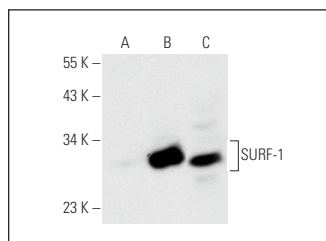
Molecular Weight of SURF-1: 31 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, human heart extract: sc-363763 or SURF-1 (h3): 293T Lysate: 117415.

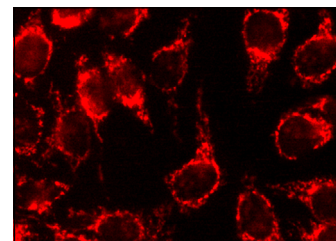
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SURF-1 (H-7): sc-365159. Western blot analysis of SURF-1 expression in non-transfected 293T: sc-117752 (A), human SURF-1 transfected 293T: sc-117415 (B) and HeLa (C) whole cell lysates.



SURF-1 (H-7): sc-365159. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.

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