

OVCA1 (6E93): sc-101248

BACKGROUND

OVCA1 (ovarian cancer-associated gene 1 protein) is a nuclear protein that belongs to the DPH1/DPH2 family (DPH1 subfamily). Diphthamide is a modified histidine amino acid that is created by a posttranslational modification of eukaryotic elongation factor 2 (EF-2). Diphthamide is the target for ADP-ribosylation by diphtheria toxin, which renders the elongation factor inactive. The diphthamide modification is conserved in all eukaryotes and archaeobacteria and is formed by the actions of five proteins, DPH1-5, and an amidating enzyme. OVCA1 (DPH1) is required for the first step in the synthesis of diphthamide. The chromosomal region that contains OVCA1, 17p13.3, is frequently deleted in human ovarian carcinoma, suggesting this 15 kb region of deletion may contain a tumor suppressor gene. OVCA1 acts as a tumor suppressor in lung and breast cancers and when overexpressed will suppress colony formation and growth rate of ovarian cancer cells. OVCA1 is expressed in heart, brain, placenta, lung, liver, skeletal muscle, kidney, pancreas, spleen, thymus, mammary gland, colon, small intestine, testis and ovary.

REFERENCES

1. Phillips, N.J., et al. 1996. A cDNA from the ovarian cancer critical region of deletion on chromosome 17p13.3. *Cancer Lett.* 102: 85-90.
2. Schultz, D.C., et al. 1996. Identification of two candidate tumor suppressor genes on chromosome 17p13.3. *Cancer Res.* 56: 1997-2002.
3. Salicioni, A.M., et al. 2000. Identification and structural analysis of human RBM8A and RBM8B: two highly conserved RNA-binding motif proteins that interact with OVCA1, a candidate tumor suppressor. *Genomics* 69: 54-62.
4. Jensen, M.R. and Helin, K. 2004. OVCA1: emerging as a bona fide tumor suppressor. *Genes Dev.* 18: 245-248.
5. Nobukuni, Y., et al. 2005. Gene trap mutagenesis-based forward genetic approach reveals that the tumor suppressor OVCA1 is a component of the biosynthetic pathway of diphthamide on elongation factor 2. *J. Biol. Chem.* 280: 10572-10577.
6. Chen, C.M. and Behringer, R.R. 2005. OVCA1 tumor suppressor gene. *Curr. Opin. Genet. Dev.* 15: 49-54.
7. He, F., et al. 2006. White spot syndrome virus open reading frame 222 encodes a viral E3 ligase and mediates degradation of a host tumor suppressor via ubiquitination. *J. Virol.* 80: 3884-3892.
8. Ortiz, P.A., et al. 2006. Translation elongation factor 2 anticodon mimicry domain mutants affect fidelity and diphtheria toxin resistance. *J. Biol. Chem.* 281: 32639-32648.

CHROMOSOMAL LOCATION

Genetic locus: DPH1 (human) mapping to 17p13.3.

SOURCE

OVCA1 (6E93) is a mouse monoclonal antibody raised against recombinant OVCA1 of human origin.

RESEARCH USE

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

PRODUCT

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

APPLICATIONS

OVCA1 (6E93) is recommended for detection of OVCA1 of 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 OVCA1 siRNA (h): sc-62727, OVCA1 shRNA Plasmid (h): sc-62727-SH and OVCA1 shRNA (h) Lentiviral Particles: sc-62727-V.

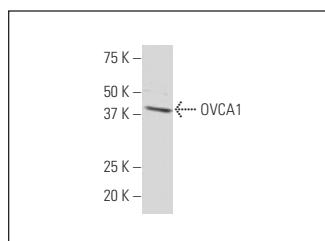
Molecular Weight of OVCA1: 50 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

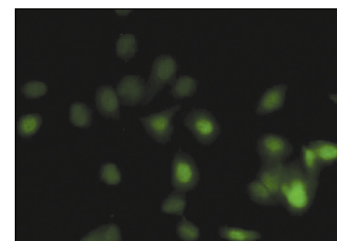
RECOMMENDED SUPPORT REAGENTS

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



OVCA1 (6E93): sc-101248. Western blot analysis of OVCA1 expression in HeLa whole cell lysate.



OVCA1 (6E93): sc-101248. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.