

# DBC-1 (H-2): sc-166733

## BACKGROUND

DBC-1 (deleted in breast cancer gene 1 protein), also known as p30 DBC protein, is one of the genes located within the region of chromosome 8p21.3 that is homozygously deleted in some breast cancers. DBC-1 contains a nuclear localization signal, an N-terminal leucine zipper, an EF hand and a C-terminal coiled-coil region. DBC-1 is closely related to DIS but lacks the SAP domain. During death signaling mediated by  $\text{TNF}\alpha$ , endogenous DBC-1 undergoes caspase-dependent processing to generate DBC-1 p120 and p66, both of which include the C-terminus of the protein. Both DBC-1 p120 and p66 relocate to the cytoplasm. Overexpression of the DBC-1 p120 form results in mitochondrial clustering and matrix condensation and increases the sensitivity of cells to  $\text{TNF}\alpha$ -mediated apoptosis. In addition, DBC-1 directly interacts with unliganded  $\text{ER}\alpha$ , stabilizing its expression and therefore collaborating to suppress apoptosis and promote hormone-independent cell growth.

## CHROMOSOMAL LOCATION

Genetic locus: CCAR2 (human) mapping to 8p21.3; Ccar2 (mouse) mapping to 14 D2.

## SOURCE

DBC-1 (H-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 740-770 within an internal region of DBC-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166733 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

DBC-1 (H-2) is recommended for detection of DBC-1 of human origin, 2610301G19Rik of mouse origin and the corresponding rat homolog by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 DBC-1 siRNA (h): sc-72274, 2610301G19Rik siRNA (m): sc-108805, DBC-1 shRNA Plasmid (h): sc-72274-SH, 2610301G19Rik shRNA Plasmid (m): sc-108805-SH, DBC-1 shRNA (h) Lentiviral Particles: sc-72274-V and 2610301G19Rik shRNA (m) Lentiviral Particles: sc-108805-V.

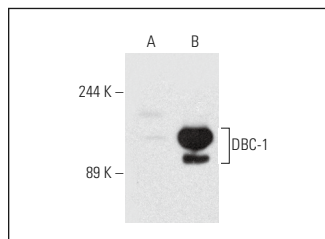
Molecular Weight of DBC-1: 150 kDa.

Positive Controls: DBC-1 (h2): 293T Lysate: sc-116793, A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

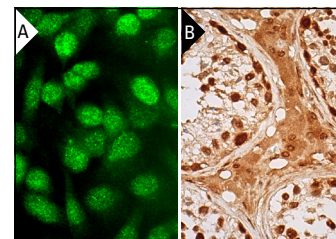
## STORAGE

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

## DATA



DBC-1 (H-2): sc-166733. Western blot analysis of DBC-1 expression in non-transfected: sc-117752 (A) and human DBC-1 transfected: sc-116793 (B) 293T whole cell lysates.



DBC-1 (H-2): sc-166733. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and nuclear and cytoplasmic staining of Leydig cells (B).

## SELECT PRODUCT CITATIONS

1. Park, J.H., et al. 2014. Modification of DBC1 by SUMO2/3 is crucial for p53-mediated apoptosis in response to DNA damage. *Nat. Commun.* 5: 5483.
2. Moreno-Navarrete, J.M., et al. 2015. Deleted in breast cancer 1 plays a functional role in adipocyte differentiation. *Am. J. Physiol. Endocrinol. Metab.* 308: E554-E561.
3. Wagle, S., et al. 2015. DBC1/CCAR2 is involved in the stabilization of androgen receptor and the progression of osteosarcoma. *Sci. Rep.* 5: 13144.
4. Chen, L., et al. 2021. CCAR2 promotes a malignant phenotype of osteosarcoma through Wnt/ $\beta$ -catenin-dependent transcriptional activation of SPARC. *Biochem. Biophys. Res. Commun.* 580: 67-73.
5. Sun, F., et al. 2024. AdipoRon promotes amyloid- $\beta$  clearance through enhancing autophagy via nuclear GAPDH-induced sirtuin 1 activation in Alzheimer's disease. *Br. J. Pharmacol.* 181: 3039-3063.

## 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) for detailed protocols and support products.