

#4880 Store at -20°C

Phospho-DBC1 (Thr454) Antibody



- Small 100 µl (10 western blots)
- Petite 40 µl (4 western blots)

Orders ■ 877-616-CELL (2355)
orders@cellsignaling.com

Support ■ 877-678-TECH (8324)
info@cellsignaling.com

Web ■ www.cellsignaling.com

rev. 01/25/10

This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

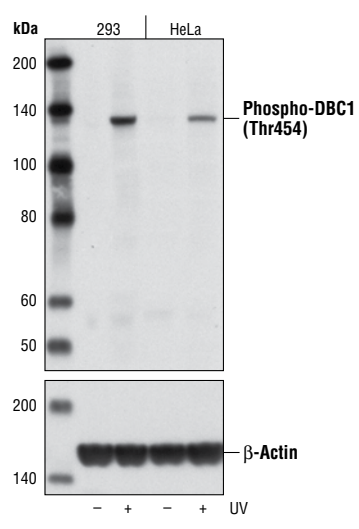
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IF-IC Endogenous	H	130 kDa	Rabbit**

Background: Deleted in breast cancer gene 1 protein (DBC1) was originally identified by its localization to a region of chromosome 8p21 that is homozygously deleted in breast cancer (1). DBC1 is a large, nuclear protein with multiple functions in cell survival. It binds directly to the estrogen receptor α (ER α) hormone-binding domain in a ligand-independent manner and may be a key determinant of ligand-independent ER α expression and survival in human breast cancer cells (2). DBC1 can promote p53-mediated apoptosis by binding to and inhibiting the deacetylase activity of SirT1, resulting in increased p53 acetylation levels and activity (3). DBC1 may be an important regulator of heterochromatin formation as it binds SUV39H1 and inhibits its histone methyltransferase activity (4). Caspase-dependent processing activates the pro-apoptotic activity of DBC1 during Tumor Necrosis Factor α (TNF α)-mediated cell death signaling (5). This processing of DBC1 in response to TNF α is an early event in the onset of apoptosis and results in re-localization of DBC1 to the cytoplasm. Over-expression of the processed, cytoplasmic form of DBC1 results in mitochondrial clustering and matrix condensation and sensitizes cells to TNF α -mediated apoptosis.

The threonine residue at 454 of DBC1 is phosphorylated in an ATM/ATR-dependent manner in response to DNA damage (6,7). Phospho-DBC1 (Thr454) Antibody is directed at a site that was identified at Cell Signaling Technology (CST) using PhosphoScan[®], CST's LC-MS/MS platform for modification site discovery. Phosphorylation at Thr454 was discovered using an ATM/ATR substrate antibody and was shown to be induced by UV treatment. Please visit PhosphoSitePlus[™], CST's modification site knowledgebase, at www.phosphosite.org for more information.

Specificity/Sensitivity: Phospho-DBC1 (Thr454) Antibody detects endogenous levels of DBC1 only when phosphorylated on Thr454.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide (KLH-coupled) corresponding to Thr454 of the human DBC1 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from 293 and HeLa cell lines, untreated or UV-treated (100 J/m² and 4 hour recovery), using Phospho-DBC1 (Thr454) Antibody (upper) or β -actin Antibody #4967 (lower).

Background References:

- (1) Hamaguchi, M. et al. (2002) *Proc Natl Acad Sci USA* 99, 13647-52.
- (2) Trauernicht, A.M. et al. (2007) *Mol Endocrinol* 21, 1526-36.
- (3) Zhao, W. et al. (2008) *Nature* 451, 587-90.
- (4) Li, Z. et al. (2009) *J Biol Chem* 284, 10361-6.
- (5) Sundararajan, R. et al. (2005) *Oncogene* 24, 4908-20.
- (6) Stokes, M.P. et al. (2007) *Proc Natl Acad Sci USA* 104, 19855-60.
- (7) Beausoleil, S.A. et al. (2004) *Proc Natl Acad Sci USA* 101, 12130-5.

Entrez-Gene ID #57805
Swiss-Prot Acc. #Q8N163

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

*Species cross-reactivity is determined by western blot.

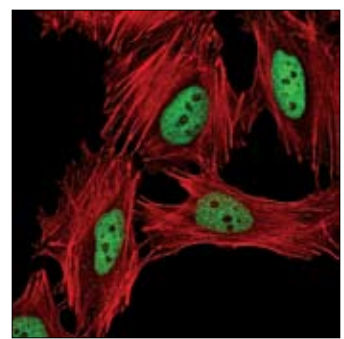
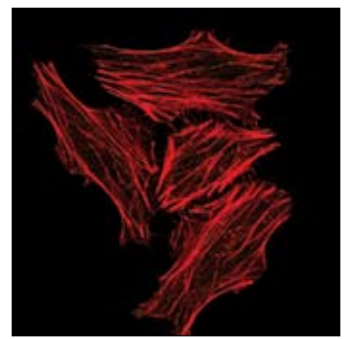
**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:25
Immunofluorescence (IF-IC)	1:400

For application specific protocols please see the web page for this product at www.cellsignaling.com.

Please visit www.cellsignaling.com for a complete listing of recommended companion products.



Confocal immunofluorescent analysis of HeLa cells, untreated (upper) and UV-treated (lower), using Phospho-DBC1 (Thr454) Antibody (green). Actin filaments have been labeled with DY-554 phalloidin (red).

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide

Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine

Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.