

# BARD1 (E-11): sc-74559

## BACKGROUND

Mutations within the BRCA1 gene, localized to chromosome 17q, are believed to account for approximately 45% of families with increased incidence of both early-onset breast cancer and ovarian cancer. The BRCA1 gene is expressed in numerous tissues, including breast and ovary, and encodes a predicted protein of 1,863 amino acids. This protein contains a RING domain near the N-terminus and appears to encode a tumor suppressor. BARD1 (BRCA1-associated RING domain protein 1) and BAP1 (BRCA1-associated protein 1) have both been shown to bind to the N-terminus of BRCA1 and are potential mediators of tumor suppression. BARD1 contains an N-terminal RING domain and three tandem ankyrin repeats. The C-terminus of BARD1 contains a region with sequence homology to BRCA1, termed the BRCT domain. BAP1 is a ubiquitin hydrolase and has been shown to enhance BRCA1-mediated cell growth suppression.

## CHROMOSOMAL LOCATION

Genetic locus: BARD1 (human) mapping to 2q35; Bard1 (mouse) mapping to 1 C3.

## SOURCE

BARD1 (E-11) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of BARD1 (BRCA-associated RING domain protein 1) of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BARD1 (E-11) is available conjugated to agarose (sc-74559 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74559 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74559 PE), fluorescein (sc-74559 FITC), Alexa Fluor® 488 (sc-74559 AF488), Alexa Fluor® 546 (sc-74559 AF546), Alexa Fluor® 594 (sc-74559 AF594) or Alexa Fluor® 647 (sc-74559 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74559 AF680) or Alexa Fluor® 790 (sc-74559 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

BARD1 (E-11) is recommended for detection of BARD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), 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 BARD1 siRNA (h): sc-37311, BARD1 siRNA (m): sc-37312, BARD1 shRNA Plasmid (h): sc-37311-SH, BARD1 shRNA Plasmid (m): sc-37312-SH, BARD1 shRNA (h) Lentiviral Particles: sc-37311-V and BARD1 shRNA (m) Lentiviral Particles: sc-37312-V.

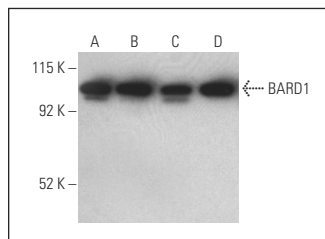
Molecular Weight of BARD1: 79 kDa.

Positive Controls: U-2 OS cell lysate: sc-2295, BT-20 cell lysate: sc-2223 or A-431 whole cell lysate: sc-2201.

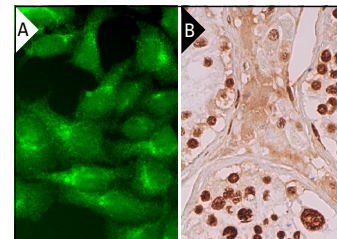
## STORAGE

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

## DATA



BARD1 (E-11): sc-74559. Western blot analysis of BARD1 expression in U-2 OS (A), BT-20 (B), MCF7 (C) and A-431 (D) whole cell lysates. Detection reagent used: m-IgG<sub>1</sub> BP-HRP: sc-525408.



BARD1 (E-11): sc-74559. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear and cytoplasmic 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

- Zhu, Y., et al. 2018. Tamoxifen-resistant breast cancer cells are resistant to DNA-damaging chemotherapy because of upregulated BARD1 and BRCA1. *Nat. Commun.* 9: 1595.
- Kurihara, M., et al. 2019. Colocalization of BRCA1 with Tau aggregates in human tauopathies. *Brain Sci.* 10: 7.
- Wu, L., et al. 2020. p50 mono-ubiquitination and interaction with BARD1 regulates cell cycle progression and maintains genome stability. *Nat. Commun.* 11: 5007.
- Minten, E.V., et al. 2021. SIRT2 promotes BRCA1-BARD1 heterodimerization through deacetylation. *Cell Rep.* 34: 108921.
- Park, J.W., et al. 2022. Metformin alleviates ionizing radiation-induced senescence by restoring BARD1-mediated DNA repair in human aortic endothelial cells. *Exp. Gerontol.* 160: 111706.
- Deng, J., et al. 2022. CRL4-DCAF8L2 E3 ligase promotes ubiquitination and degradation of BARD1. *Biochem. Biophys. Res. Commun.* 611: 107-113.
- Dillon, K.M., et al. 2022. PALB2 or BARD1 loss confers homologous recombination deficiency and PARP inhibitor sensitivity in prostate cancer. *NPJ Precis. Oncol.* 6: 49.
- Kornepati, A.V.R., et al. 2022. Tumor intrinsic PD-L1 promotes DNA repair in distinct cancers and suppresses PARP inhibitor-induced synthetic lethality. *Cancer Res.* 82: 2156-2170.
- Gelot, C., et al. 2023. Polθ is phosphorylated by PLK1 to repair double-strand breaks in mitosis. *Nature* 621: 415-422.

## RESEARCH USE

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

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