

BRCA1 (287.17): sc-135732

BACKGROUND

In 1990, a breast cancer susceptibility gene, designated BRCA1, was localized to chromosome 17q21.31. Mutations within this gene are believed to account for approximately 45% of families with high incidence of breast cancer and at least 80% of families with increased incidence of both early-onset breast cancer and ovarian cancer. A second breast cancer susceptibility gene, BRCA2, located on chromosome 13q13.1, also confers a high incidence of breast cancer but, unlike BRCA1, does not confer a substantially elevated risk of 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 zinc finger domain in its amino terminal region, but is otherwise unrelated to any previously described proteins. Like many other genes involved in familial cancer, BRCA1 appears to encode a tumor suppressor, a protein that acts as a negative regulator of tumor growth.

REFERENCES

- Hall, J.M., et al. 1990. Linkage of early-onset familial breast cancer to chromosome 17q21. *Science* 250: 1684-1689.
- Narod, S.A., et al. 1991. Familial breast-ovarian cancer locus on chromosome 17q12-q23. *Lancet* 338: 82-83.

CHROMOSOMAL LOCATION

Genetic locus: BRCA1 (human) mapping to 17q21.31; Brca1 (mouse) mapping to 11 D.

SOURCE

BRCA1 (287.17) is a mouse monoclonal antibody raised against recombinant BRCA1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

BRCA1 (287.17) is recommended for detection of BRCA1 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), 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 BRCA1 siRNA (h): sc-29219, BRCA1 siRNA (m): sc-29824, BRCA1 shRNA Plasmid (h): sc-29219-SH, BRCA1 shRNA Plasmid (m): sc-29824-SH, BRCA1 shRNA (h) Lentiviral Particles: sc-29219-V and BRCA1 shRNA (m) Lentiviral Particles: sc-29824-V.

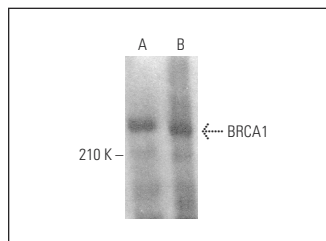
Molecular Weight of BRCA1: 220 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138 or 3T3-L1 cell lysate: sc-2243.

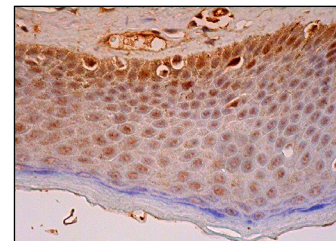
STORAGE

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

DATA



BRCA1 (287.17): sc-135732. Western blot analysis of BRCA1 expression in 3T3-L1 whole cell lysate (A) and NIH/3T3 nuclear extract (B).



BRCA1 (287.17): sc-135732. Immunoperoxidase staining of formalin fixed, paraffin-embedded human vulva/anal skin tissue showing nuclear and cytoplasmic staining of epidermal cells.

SELECT PRODUCT CITATIONS

- Das, A., et al. 2013. Lamin A Δ exon9 mutation leads to telomere and chromatin defects but not genomic instability. *Nucleus* 4: 410-419.
- Choi, Y.S., et al. 2018. Association between impairment of DNA double strand break repair and decreased ovarian reserve in patients with endometriosis. *Front. Endocrinol.* 9: 772.
- Hu, L., et al. 2020. A novel M phase blocker, DCZ3301 enhances the sensitivity of bortezomib in resistant multiple myeloma through DNA damage and mitotic catastrophe. *J. Exp. Clin. Cancer Res.* 39: 105.
- Yang, J., et al. 2021. BRCA1 antibodies matter. *Int. J. Biol. Sci.* 17: 3239-3254.
- Imai, S., et al. 2021. *Helicobacter pylori* CagA elicits BRCAness to induce genome instability that may underlie bacterial gastric carcinogenesis. *Cell Host Microbe* 29: 941-958.e10.
- Qi, L., et al. 2022. Phosphorylation of BRCA1 by ATM upon double-strand breaks impacts ATM function in end-resection: a potential feedback loop. *iScience* 25: 104944.
- Zhuang, J., et al. 2022. Brca1 is regulated by the transcription factor Gata3, and its silencing promotes neural differentiation in retinal neurons. *Int. J. Mol. Sci.* 23: 13860.
- Wu, B., et al. 2023. BRCA1 deficiency in mature CD8⁺ T lymphocytes impairs antitumor immunity. *J. Immunother. Cancer* 11: e005852.

RESEARCH USE

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



See **BRCA1 (247.56): sc-135731** for BRCA1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.