SANTA CRUZ BIOTECHNOLOGY, INC.

BRCA1 (C-20): sc-642

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 13q12-13, 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.

CHROMOSOMAL LOCATION

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

SOURCE

BRCA1 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of BRCA1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-642 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

BRCA1 (C-20) is recommended for detection of BRCA1 of human and, to a lesser extent, mouse and rat 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 1:25, dilution range 1:25-1:250), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:25, dilution range 1:25-1:250) 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: HeLa nuclear extract: sc-2120, A-431 nuclear extract: sc-2122 or HeLa + UV cell lysate: sc-2221.

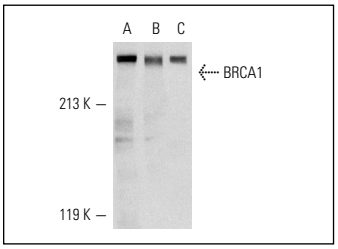
STORAGE

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

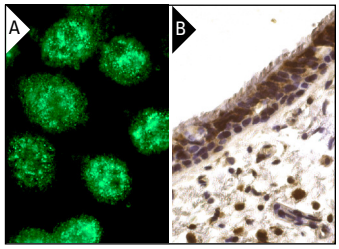
RESEARCH USE

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

DATA



BRCA1 (C-20): sc-642. Western blot analysis of BRCA1 expression in A-431 (**A**), HeLa (**B**) and NIH/3T3 (**C**) nuclear extracts.



BRCA1 (C-20): sc-642. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing nuclear and cytoplasmic staining of respiratory epithelial cells and interstitial cells (**B**).

SELECT PRODUCT CITATIONS

1. Chen, Y., et al. 1995. Aberrant subcellular localization of BRCA1 in breast cancer. Science 270: 789-791.
2. Hiraike, H., et al. 2010. Identification of DBC1 as a transcriptional repressor for BRCA1. Br. J. Cancer 102: 1061-1067.
3. Aguilar-Morante, D., et al. 2011. Decreased CCAAT/enhancer binding protein β expression inhibits the growth of glioblastoma cells. Neuroscience 176: 110-119.
4. Kang, H.J., et al. 2011. Detoxification: a novel function of BRCA1 in tumor suppression? Toxicol. Sci. 122: 26-37.
5. Cappelli, E., et al. 2011. Homologous recombination proteins are associated with centrosomes and are required for mitotic stability. Exp. Cell Res. 317: 1203-1213.
6. Bai, F., et al. 2012. Germline mutation of Brca1 alters the fate of mammary luminal cells and causes luminal-to-basal mammary tumor transformation. Oncogene 32: 2715-2725.
7. Nakada, S., et al. 2012. RNF8 regulates assembly of RAD51 at DNA double-strand breaks in the absence of BRCA1 and 53BP1. Cancer Res. 72: 4974-4983.
8. Ray, A., et al. 2013. NER initiation factors, DDB2 and XPC, regulate UV radiation response by recruiting ATR and ATM kinases to DNA damage sites. DNA Repair 12: 273-283.