SANTA CRUZ BIOTECHNOLOGY, INC.

BRCA1 (I-20): sc-646

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 (I-20) is available as either rabbit (sc-646) or goat (sc-646-G) polyclonal affinity purified antibody raised against a peptide mapping near the C-terminus of BRCA1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-646 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

BRCA1 (I-20) is recommended for detection of BRCA1 of mouse, rat, human and *Xenopus laevis* 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).

BRCA1 (I-20) is also recommended for detection of BRCA1 in additional species, including equine, canine, bovine and porcine.

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.

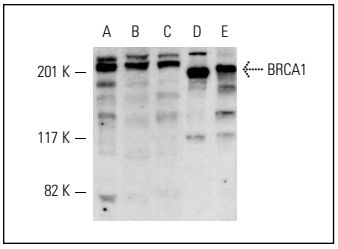
STORAGE

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

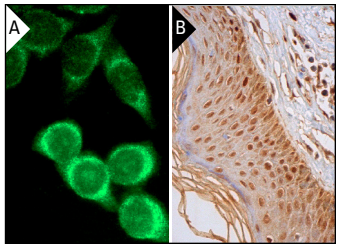
RESEARCH USE

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

DATA



BRCA1 (I-20): sc-646. Western blot analysis of BRCA1 expression in A-431 (**A**), HeLa (**B**), MCF7 (**C**), KNRK (**D**) and NIH/3T3 (**E**) nuclear extracts.



LAMP-1 (C-20): sc-8098. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human vulva/anal skin tissue showing nuclear and cytoplasmic staining of epidermal cells (**B**).

SELECT PRODUCT CITATIONS

1. Rao, V.N., et al. 1996. Antisense RNA to the putative tumor suppressor gene BRCA1 transforms mouse fibroblasts. Oncogene 12: 523-528.
2. Bogdani, M., et al. 2002. Loss of nuclear BRCA1 localization in breast carcinoma is age dependent. Virchows Arch. 440: 274-279.
3. Law, B.K., et al. 2002. Rapamycin potentiates transforming growth factor β-induced growth arrest in nontransformed, oncogene-transformed, and human cancer cells. Mol. Cell. Biol. 22: 8184-8198.
4. Zhang, Y., et al. 2005. BRCA1 interaction with human papillomavirus oncoproteins. J. Biol. Chem. 280: 33165-33177.
5. Kluk, B.J., et al. 2010. BP1, an isoform of DLX4 homeoprotein, negatively regulates BRCA1 in sporadic breast cancer. Int. J. Biol. Sci. 6: 513-524.
6. Li, H., et al. 2010. Wild-type BRCA1, but not mutated BRCA1, regulates the expression of the nuclear form of β-catenin. Mol. Cancer Res. 8: 407-420.
7. Dateki, M., et al. 2011. Adaptive gene regulation of pyruvate dehydrogenase kinase isoenzyme 4 in hepatotoxic chemical-induced liver injury and its stimulatory potential for DNA repair and cell proliferation. J. Recept. Signal Transduct. Res. 31: 85-95.
8. Ortega, F.J., et al. 2012. Breast cancer 1 (BRCA1) may be behind decreased lipogenesis in adipose tissue from obese subjects. PLoS ONE 7: e33233.
9. Jamsai, D., et al. 2013. Loss of GGN leads to pre-implantation embryonic lethality and compromised male meiotic DNA double strand break repair in the mouse. PLoS ONE 8: e56955.