SANTA CRUZ BIOTECHNOLOGY, INC.

BRCA1 (M-20): sc-1553

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The Power to Question

BACKGROUND

In 1990, a breast cancer susceptibility gene, designated BRCA1, was localized to chromosome 17q. 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.

REFERENCES

1. Hall, J.M., et al. 1990. Linkage of early-onset familial breast cancer to chromosome 17q21. Science 250: 1684-1689.
2. Narod, S.A., et al. 1991. Familial breast-ovarian cancer locus on chromosome 17q12-q23. Lancet 338: 82-83.
3. Novak, R. 1994. Breast cancer gene offers surprises. Science 265: 1796-1799.
4. Wooster, R., et al. 1994. Localization of a breast cancer susceptibility gene, BRCA2, to chromosome 13q12-13. Science 265: 2088-2090.
5. Miki, Y., et al. 1994. A strong candidate for the breast and ovarian cancer susceptibility gene BRCA1. Science 266: 66-71.
6. Futreal, P.A., et al. 1994. BRCA1 mutations in primary breast and ovarian carcinomas. Science 266: 120-122.

CHROMOSOMAL LOCATION

Genetic locus: Brca1 (mouse) mapping to 11 D.

SOURCE

BRCA1 (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of BRCA1 of mouse 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-1553 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

BRCA1 (M-20) is recommended for detection of BRCA1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (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 (m): sc-29824, BRCA1 shRNA Plasmid (m): sc-29824-SH and BRCA1 shRNA (m) Lentiviral Particles: sc-29824-V.

Molecular Weight of BRCA1: 220 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138 or KNRK nuclear extract: sc-2141.

SELECT PRODUCT CITATIONS

1. Zhang, H.T., et al. 1997. Relationship of p215BRCA1 to tyrosine kinase signaling pathways and the cell cycle in normal and transformed cells. Oncogene 14: 2863-2869.
2. Bachelier, R., et al. 2000. Differential expression and subcellular localization of murine BRCA1 and BRCA1-δ 11 isoforms in murine and human cell lines. Int. J. Cancer 88: 519-524.
3. Baldassarre, G., et al. 2003. Negative regulation of BRCA1 gene expression by HMGA1 proteins accounts for the reduced BRCA1 protein levels in sporadic breast carcinoma. Mol. Cell. Biol. 23: 2225-2238.
4. Korhonen, L., et al. 2003. Tumor suppressor gene BRCA1 is expressed by embryonic and adult neural stem cells and involved in cell proliferation. J. Neurosci. Res. 71: 769-776.
5. Feki, A., et al. 2004. BARD1 expression during spermatogenesis is associated with apoptosis and hormonally regulated. Biol. Reprod. 71: 1614-1624.
6. Turner, J.M., et al. 2004. BRCA1, histone H2AX phosphorylation, and male meiotic sex chromosome inactivation. Curr. Biol. 14: 2135-2142.
7. Baldassaree, G., et al. 2005. HMGA1 protein expression sensitizes cells to cisplatin-induced cell death. Oncogene 24: 6809-6819.
8. Yu, Y.M., et al. 2008. A PP1-binding motif present in BRCA1 plays a role in its DNA repair function. Int. J. Biol. Sci. 4: 352-361.
9. Forand, A., et al. 2009. Similarities and differences in the *in vivo* response of mouse neonatal gonocytes and spermatogonia to genotoxic stress. Biol. Reprod. 80: 860-873.

RESEARCH USE

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