

Product Information

ANTI-BRCA1

Developed in Rabbit, Fractionated Antiserum

Product Number **B 5433**

Product Description

Polyclonal Anti-BRCA1 (Breast and Ovarian Cancer Susceptibility Gene 1) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 768–793 of the human BRCA 1 protein coupled to keyhole limpet hemocyanin (KLH). The antibody is fractionated by ammonium sulfate precipitation. Anti-BRCA1 recognizes human BRCA1 protein of approximately 220 kDa. It does not cross-react with EGFR or c-erb-2 oncoprotein. It has been used in immunoblotting, immunoprecipitation, flow cytometry, immunofluorescence, and immunohistochemistry staining with frozen and paraffin embedded tissues.

Two major susceptibility genes for breast cancer, BRCA1 and BRCA2, have been identified. Both genes are considered to be tumor-suppressor genes. Mutations within BRCA1 and BRCA2 are responsible for most familial breast cancer cases. Functional analyses of the BRCA1 and BRCA2 gene products have established their dual participation in transcription regulation and DNA damage repair. Current genetic testing for mutated BRCA1 and BRCA2 is the basis for estimating disease risk for women with a strong family history of breast cancer and will provide important information on the prevention and treatment of familial breast cancer.¹

BRCA1 affects cell cycle regulation and loss of BRCA1 function due to decreased expression leads to cell cycle arrest, through p53 and p21 genes. *In vivo*, BRCA1 and BRCA2 are expressed at maximal levels in rapidly proliferating cells. This feature is consistent with *in vitro* observations that BRCA1 and BRCA2 are expressed in a cell cycle-dependent manner. During mammary gland development, the expression of BRCA1 and BRCA2 is induced in rapidly proliferating cellular compartments.^{2,3}

Reagent

Anti-BRCA1 is supplied as a solution in phosphate buffered saline, pH 7.4 with 0.08% sodium azide as a preservative. Each vial contains approximately 100 µg of antibody in 100 µl.

Storage/Stability

Store at –20 °C. For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing to prevent denaturing the antibody. Working dilution samples should be discarded if not used within 12 hours. The antibody is stable for at least 12 months when stored appropriately.

Product Profile

The recommended working concentration for immunoblotting is 5 to 10 µg/ml using HeLa or MDA-MB-468 cells. For immunoprecipitation, the recommended working concentration is 10 µg/mg of protein lysate.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Phillips, K.A., Current perspectives on BRCA1- and BRCA2-associated breast cancers. *Intern. Med. J.*, **31**, 349-356 (2001).
2. Chodosh, L. A., Expression of BRCA1 and BRCA2 in normal and neoplastic cells. *J. Mammary Gland Biol. Neoplasia.*, **3**, 389-402 (1998).
3. Ruffner, H. and Verma, I. M., BRCA1 is a cell-cycle-regulated nuclear phosphoprotein. *Proc. Natl. Acad. Sci. USA*, **94**, 7138-7143 (1997).

AH 11/01

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.