Datasheet: MCA1683GT

Description:	MOUSE ANTI HUMAN BRCA1 (N-TERMINAL)
Specificity:	BRCA1 (N-TERMINAL)
Other names:	BREAST CANCER TYPE 1 SUSCEPTIBILITY PROTEIN
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	MS13
Isotype:	IgG1
Quantity:	50 µg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry			▪	
Immunohistology - Frozen			▪	
Immunohistology - Paraffin	▪			1/50
ELISA			▪	
Immunoprecipitation	▪			
Western Blotting	▪			0.5ug/ml
Immunofluorescence	▪			1/500

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

Target Species	Human
Product Form	Purified IgG - liquid
Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
Buffer Solution	TRIS-glycine buffered saline, NaCl
Preservative Stabilisers	0.05% Sodium Azide
Approx. Protein Concentrations	IgG concentration 1.0 mg/ml
Immunogen	Recombinant protein corresponing to the N-Terminal region of human BRCA1
External Database	**UniProt:**

Links	P38398 Related reagents **Entrez Gene:** 672 BRCA1 Related reagents
Synonyms	RNF53
Fusion Partners	Spleen cells from immunised mice were fused with cells of the mouse NS1 myeloma cell line.
Specificity	**Mouse anti Human BRCA1 antibody, clone MS13** recognizes the human tumor supressor protein BRCA-1, also known as Breast cancer type 1 susceptibility protein or RING finger protein 53. BRCA1 is a 1863 amino acid, ~220kDa E3 ubiquitin-protein ligase playing a central role in DNA repair (Tibbetts *et al.* 2000), expressed in the nucleus during the S/G2 phase of the cell cycle (Durrant and Nickoloff 2005). Normal BRCA-1 acts as a tumor supressor protein and mutation or dysregulation of BRCA1 may indicate high risk of development of disease, including breast cancer (Budhram-Mahadeo *et al.* 1999). Mouse anti human BRCA-1, clone MS13 recognizes an epitope within the 304 amino acid N-Terminal (NT) region (Yoshikawa *et al.* 1999) of human BRCA1. BRCA1 is expressed numerous organs including mammary and ovarian tissues (Miki *et al.* 1994) . Mutations in the BRCA-1 gene are associated with hereditary breast and ovarian cancers, particularly at a younger age of diagnosis. Women carrying BRCA1 mutations have a 50-95% chance of developing breast cancer in later life (Elit 2001), secondary cancers such as prostate or melanoma also frequently arise in the latter stages of both male and female breast cancer patients (Benevento *et al.* 2012), but genetic screening and increased awareness of preventative surgery, can reduce this risk significantly (Scheuer *et al.* 2002). However, in males pancreatic and prostate cancer appear to be more strongly associated with BRCA2 gene mutations (Gallagher *et al.* 2010). BRCA1 is a key marker of triple-negative breast cancer (TNBC), a high risk aggressive cancer which makes up about 15% of invasive breast cancers, and lacks the benefit of specific targeted therapy (Duffy *et al.* 2012). Triple-negative tumors are predominantly basal-like, poorly differentiated and of higher histological grade. Younger women have an increased rate of basal or BRCA related TNBC, compared with the higher proportion of apocrine, normal-like and rare subtypes of TNBC, seen in older women (Liu *et al.* 2009). Studies looking at sporadic breast cancer, have shown that clone MS13 strongly correlates with poor patient prognosis, and appears to label the Δ11b splice variant of BRCA1, suggesting that Δ11b could act as a negative marker in the prognosis of sporadic breast cancer (Fraser *et al.* 2003) Mouse anti human BRCA1 antibody, clone MS13 is suitable for use in the immunohistochemical staining of human breast (Fraser *et al.* 2003) and for immunofluorescence in multiple cell lines (Scully *et al.* 1996).
Histology Positive Control Tissue	Breast carcinoma
Western Blotting	Mouse anti Human BRCA1 detects a band of approximately 220kDa in HeLa nuclear extract. Some cell lysates may also show an uncharacterized band of approximately 65kDa.
References	1. Scully, R. *et al.* (1996) Location of BRCA1 in human breast and ovarian cancer cells. Science 272: 123-125 2. Yoshikawa, K. *et al.* (1999) Reduction of BRCA1 protein expression in Japanese sporadic breast carcinomas and its frequent loss in BRCA1-associated cases. Clin. Cancer Res. 5: 1249-1261 3. Ribeiro-Silva, A. *et al.* (2005) p63 correlates with both BRCA1 and cytokeratin 5 in invasive

breast carcinomas: further evidence for the pathogenesis of the basal phenotype of breast cancer. Histopathology. 47: 458-66
4. Oliveira-Costa, J.P. *et al.* (2010) Significance of topoisomerase IIIβ expression in breast ductal carcinomas: strong associations with disease-specific survival and metastasis. Hum Pathol. 41: 1624-30.
5. Oliveira-Costa, J.P. *et al.* (2014) BRCA1 and γH2AX as independent prognostic markers in oral squamous cell carcinoma. Oncoscience. 1 (5): 383-91.
6. Ribeiro-Silva, A. *et al.* (2006) Expression of checkpoint kinase 2 in breast carcinomas: correlation with key regulators of tumor cell proliferation, angiogenesis, and survival. Histol Histopathol. 21 (4): 373-82.
7. Meng, Z.H. *et al.* (2004) Aberrations of breast cancer susceptibility genes occur early in sporadic breast tumors and in acquisition of breast epithelial immortalization. Genes Chromosomes Cancer. 41 (3): 214-22.

Further Reading	1. Fraser, J.A. *et al.* (2003) A role for BRCA1 in sporadic breast cancer. Br J Cancer. 88: 1263-70.
Storage	Store at +4ºC or at -20ºC if preferred. This product should be stored undiluted. Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.
Shelf Life	18 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10511 available at: 10511: https://www.bio-rad-antibodies.com/uploads/MSDS/10511.pdf
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos., HRP
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos., DyLight®488, DyLight®549, DyLight®649, DyLight®680, DyLight®800, FITC, HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (STAR77...)	HRP
Rabbit Anti Mouse IgG (STAR12...)	RPE
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC, HRP
Rabbit Anti Mouse IgG (STAR8...)	DyLight®800
Goat Anti Mouse IgG (STAR70...)	FITC
Rabbit Anti Mouse IgG (STAR13...)	HRP
Human Anti Mouse IgG1 (HCA036...)	HRP

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL (MCA928)

North & South America
Tel: +1 800 265 7376
Fax: +1 919 878 3751
Email: antibody_sales_us@bio-rad.com

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