

Datasheet: MCA1683GT

BATCH NUMBER 160705

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	0.05% Sodium Azide

Stabilisers

Approx. Protein Concentrations IgG concentration 1.0 mg/ml

Immunogen Recombinant protein corresponding to the N-Terminal region of human BRCA1

External Database Links

UniProt:

[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 suppressor protein BRCA-1, also known as Breast cancer type 1 susceptibility protein or RING finger protein 53. BRCA1 is a 1863 amino acid, ~220 kDa 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 suppressor 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 $\Delta 11b$ splice variant of

BRCA1, suggesting that $\Delta 11b$ 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 \(5258\): 123-6.](#)
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 \(6\): 1249-61.](#)
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 III β 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 γ H2AX 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 +4°C or at -20°C 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.

Guarantee

12 months from date of despatch

Health And Safety

Material Safety Datasheet documentation #10511 available at:

Information 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 (STAR77...)	HRP
Rabbit Anti Mouse IgG (STAR12...)	RPE
Goat Anti Mouse IgG (STAR70...)	FITC
Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos. , HRP
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos. , DyLight®488 , DyLight®550 , DyLight®650 , DyLight®680 , DyLight®800 , FITC , HRP
Rabbit Anti Mouse IgG (STAR13...)	HRP
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC , HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC

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'M365594:200529'

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