

## Datasheet: MCA1683GT

**BATCH NUMBER 156333**

<b>Description:</b>	MOUSE ANTI HUMAN BRCA1 (N-TERMINAL)
<b>Specificity:</b>	BRCA1 (N-TERMINAL)
<b>Other names:</b>	BREAST CANCER TYPE 1 SUSCEPTIBILITY PROTEIN
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	MS13
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	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](http://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.

<b>Target Species</b>	Human
<b>Product Form</b>	Purified IgG - liquid
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant
<b>Buffer Solution</b>	TRIS-glycine buffered saline, NaCl
<b>Preservative</b>	0.05% Sodium Azide

## Stabilisers

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**Approx. Protein Concentrations** IgG concentration 1.0 mg/ml

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

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## External Database Links

**UniProt:**

[P38398](#)    [Related reagents](#)

**Entrez Gene:**

[672](#) BRCA1    [Related reagents](#)

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**Synonyms** RNF53

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**Fusion Partners** Spleen cells from immunised mice were fused with cells of the mouse NS1 myeloma cell line.

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## 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](#)).

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**Histology Positive Control Tissue**

Breast carcinoma

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**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.

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**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 $\beta$  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  $\gamma$ 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.](#)

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**Further Reading**

1. Fraser, J.A. *et al.* (2003) A role for BRCA1 in sporadic breast cancer. [Br J Cancer. 88: 1263-70.](#)

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**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.

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**Guarantee**

12 months from date of despatch

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**Health And Safety**

Material Safety Datasheet documentation #10511 available at:

**Information** <https://www.bio-rad-antibodies.com/SDS/MCA1683GT>  
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**Regulatory** For research purposes only

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## 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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To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://www.bio-rad-antibodies.com/datasheets)

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