

**BRCA1 Antibody**  
**Purified Mouse Monoclonal Antibody**  
**Catalog # AO1812a****Specification****BRCA1 Antibody - Product Information**

Application	<b>E, WB, IHC</b>
Primary Accession	<a href="#">P38398</a>
Reactivity	<b>Human</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Isotype	<b>IgG1</b>
Calculated MW	<b>207.7kDa KDa</b>

**Description**

This gene encodes a nuclear phosphoprotein that plays a role in maintaining genomic stability, and it also acts as a tumor suppressor. The encoded protein combines with other tumor suppressors, DNA damage sensors, and signal transducers to form a large multi-subunit protein complex known as the BRCA1-associated genome surveillance complex (BASC). This gene product associates with RNA polymerase II, and through the C-terminal domain, also interacts with histone deacetylase complexes. This protein thus plays a role in transcription, DNA repair of double-stranded breaks, and recombination. Mutations in this gene are responsible for approximately 40% of inherited breast cancers and more than 80% of inherited breast and ovarian cancers. Alternative splicing plays a role in modulating the subcellular localization and physiological function of this gene. Many alternatively spliced transcript variants, some of which are disease-associated mutations, have been described for this gene, but the full-length natures of only some of these variants has been described. A related pseudogene, which is also located on chromosome 17, has been identified.

**Immunogen**

Purified recombinant fragment of human BRCA1 (AA: 229-335) expressed in E. Coli.

**Formulation**

Purified antibody in PBS with 0.05% sodium azide

**BRCA1 Antibody - Additional Information**

**Gene ID** 672

**Other Names**

Breast cancer type 1 susceptibility protein, 6.3.2.-, RING finger protein 53, BRCA1, RNF53

**Dilution**

E~~1/10000

WB~~1/500 - 1/2000

IHC~~1/200 - 1/1000

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

## Precautions

BRCA1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## BRCA1 Antibody - Protein Information

**Name** BRCA1

**Synonyms** RNF53

### Function

E3 ubiquitin-protein ligase that specifically mediates the formation of 'Lys-6'-linked polyubiquitin chains and plays a central role in DNA repair by facilitating cellular responses to DNA damage (PubMed:<a href="http://www.uniprot.org/citations/12890688" target="\_blank">12890688</a>, PubMed:<a href="http://www.uniprot.org/citations/14976165" target="\_blank">14976165</a>, PubMed:<a href="http://www.uniprot.org/citations/16818604" target="\_blank">16818604</a>, PubMed:<a href="http://www.uniprot.org/citations/17525340" target="\_blank">17525340</a>, PubMed:<a href="http://www.uniprot.org/citations/12887909" target="\_blank">12887909</a>, PubMed:<a href="http://www.uniprot.org/citations/10500182" target="\_blank">10500182</a>, PubMed:<a href="http://www.uniprot.org/citations/19261748" target="\_blank">19261748</a>). It is unclear whether it also mediates the formation of other types of polyubiquitin chains (PubMed:<a href="http://www.uniprot.org/citations/12890688" target="\_blank">12890688</a>). The BRCA1-BARD1 heterodimer coordinates a diverse range of cellular pathways such as DNA damage repair, ubiquitination and transcriptional regulation to maintain genomic stability (PubMed:<a href="http://www.uniprot.org/citations/12890688" target="\_blank">12890688</a>, PubMed:<a href="http://www.uniprot.org/citations/14976165" target="\_blank">14976165</a>, PubMed:<a href="http://www.uniprot.org/citations/20351172" target="\_blank">20351172</a>). Regulates centrosomal microtubule nucleation (PubMed:<a href="http://www.uniprot.org/citations/18056443" target="\_blank">18056443</a>). Required for appropriate cell cycle arrests after ionizing irradiation in both the S-phase and the G2 phase of the cell cycle (PubMed:<a href="http://www.uniprot.org/citations/10724175" target="\_blank">10724175</a>, PubMed:<a href="http://www.uniprot.org/citations/12183412" target="\_blank">12183412</a>, PubMed:<a href="http://www.uniprot.org/citations/11836499" target="\_blank">11836499</a>, PubMed:<a href="http://www.uniprot.org/citations/19261748" target="\_blank">19261748</a>). Required for FANCD2 targeting to sites of DNA damage (PubMed:<a href="http://www.uniprot.org/citations/12887909" target="\_blank">12887909</a>). Inhibits lipid synthesis by binding to inactive phosphorylated ACACA and preventing its dephosphorylation (PubMed:<a href="http://www.uniprot.org/citations/16326698" target="\_blank">16326698</a>). Contributes to homologous recombination repair (HRR) via its direct interaction with PALB2, fine-tunes recombinational repair partly through its modulatory role in the PALB2-dependent loading of BRCA2-RAD51 repair machinery at DNA breaks (PubMed:<a href="http://www.uniprot.org/citations/19369211" target="\_blank">19369211</a>). Component of the BRCA1-RBBP8 complex which regulates CHEK1 activation and controls cell cycle G2/M checkpoints on DNA damage via BRCA1-mediated ubiquitination of RBBP8 (PubMed:<a href="http://www.uniprot.org/citations/16818604" target="\_blank">16818604</a>). Acts as a transcriptional activator (PubMed:<a href="http://www.uniprot.org/citations/20160719" target="\_blank">20160719</a>).

### Cellular Location

Nucleus. Chromosome. Cytoplasm. Note=Localizes at sites of DNA damage at double-strand breaks (DSBs); recruitment to DNA damage sites is mediated by ABRAXAS1 and the BRCA1-A complex (PubMed:26778126) Translocated to the cytoplasm during UV-induced apoptosis (PubMed:20160719). [Isoform 5]: Cytoplasm

### Tissue Location

Isoform 1 and isoform 3 are widely expressed. Isoform 3 is reduced or absent in several breast and

ovarian cancer cell lines

## BRCA1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

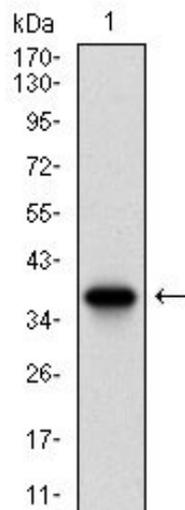
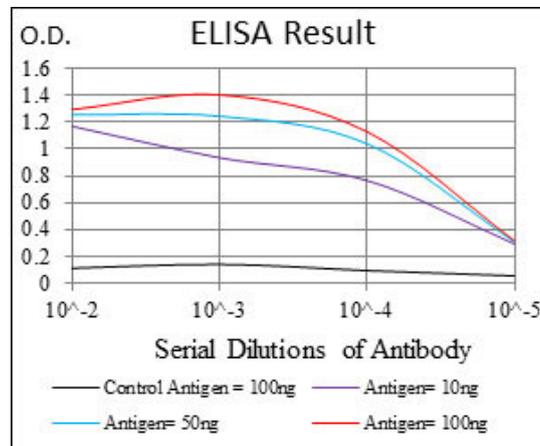


Figure 1: Western blot analysis using BRCA1 mAb against human BRCA1 recombinant protein. (Expected MW is 37.5 kDa)

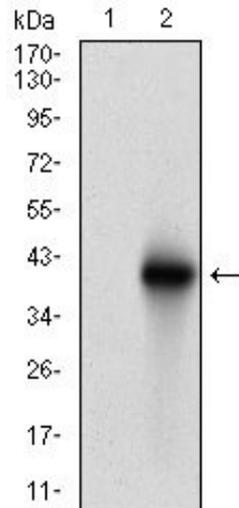


Figure 2: Western blot analysis using BRCA1 mAb against HEK293 (1) and BRCA1 (AA: 229-335)-hlgGfc transfected HEK293 (2) cell lysate.

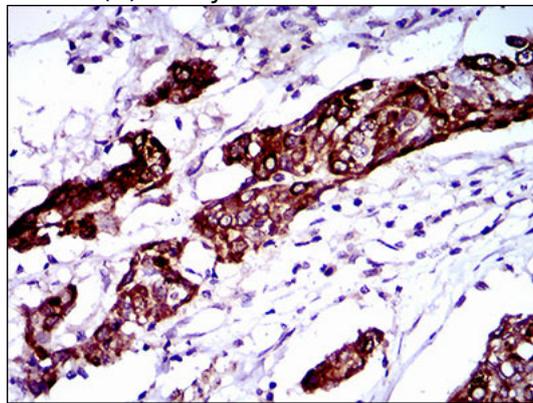


Figure 3: Immunohistochemical analysis of paraffin-embedded esophagus cancer tissues using BRCA1 mouse mAb with DAB staining.

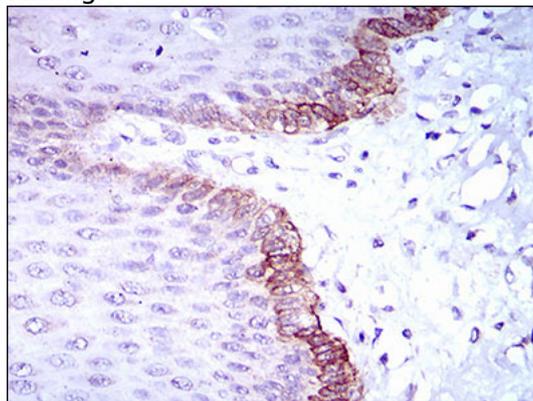


Figure 4: Immunohistochemical analysis of paraffin-embedded esophagus tissues using BRCA1 mouse mAb with DAB staining.

### BRCA1 Antibody - Background

This gene encodes a nuclear phosphoprotein that plays a role in maintaining genomic stability, and it also acts as a tumor suppressor. The encoded protein combines with other tumor suppressors, DNA damage sensors, and signal transducers to form a large multi-subunit protein complex known as the BRCA1-associated genome surveillance complex (BASC). This gene product associates with RNA polymerase II, and through the C-terminal domain, also interacts with histone deacetylase

complexes. This protein thus plays a role in transcription, DNA repair of double-stranded breaks, and recombination. Mutations in this gene are responsible for approximately 40% of inherited breast cancers and more than 80% of inherited breast and ovarian cancers. Alternative splicing plays a role in modulating the subcellular localization and physiological function of this gene. Many alternatively spliced transcript variants, some of which are disease-associated mutations, have been described for this gene, but the full-length natures of only some of these variants has been described. A related pseudogene, which is also located on chromosome 17, has been identified. ; ; ;

#### **BRCA1 Antibody - References**

1. Cancer Res. 2013 Jan 15;73(2):706-15. 2. J Biol Chem. 2012 Nov 23;287(48):40618-28.