

Product datasheet

Anti-BRCA1 antibody ab238983

11 Images

Overview

Product name	Anti-BRCA1 antibody
Description	Rabbit polyclonal to BRCA1
Host species	Rabbit
Tested applications	Suitable for: IHC-P, WB
Species reactivity	Reacts with: Mouse, Rat, Human Predicted to work with: Chimpanzee, Rhesus monkey, Gorilla, Orangutan ▲
Immunogen	Synthetic peptide corresponding to Human BRCA1 aa 979-993. Database link: P38398
Positive control	WB: MCF7, HeLa and NIH/3T3 cell extracts; Mouse lung extract. IHC-P: Human breast cancer tissue; Mouse liver, testis, spinal cord, brain and pancreas tissue; Rat testis, ovary, pancreas and brain tissue.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.30 Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol
Purity	Affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab238983** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		1/50 - 1/200.
WB		1/500 - 1/2000. Predicted molecular weight: 207 kDa.

Target

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. It is unclear whether it also mediates the formation of other types of polyubiquitin chains. The E3 ubiquitin-protein ligase activity is required for its tumor suppressor function. The BRCA1-BARD1 heterodimer coordinates a diverse range of cellular pathways such as DNA damage repair, ubiquitination and transcriptional regulation to maintain genomic stability. Regulates centrosomal microtubule nucleation. Required for normal cell cycle progression from G2 to mitosis. Required for appropriate cell cycle arrests after ionizing irradiation in both the S-phase and the G2 phase of the cell cycle. Involved in transcriptional regulation of P21 in response to DNA damage. Required for FANCD2 targeting to sites of DNA damage. May function as a transcriptional regulator. Inhibits lipid synthesis by binding to inactive phosphorylated ACACA and preventing its dephosphorylation. 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.

Tissue specificity

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

Pathway

Protein modification; protein ubiquitination.

Involvement in disease

Defects in BRCA1 are a cause of susceptibility to breast cancer (BC) [MIM:114480]. A common malignancy originating from breast epithelial tissue. Breast neoplasms can be distinguished by their histologic pattern. Invasive ductal carcinoma is by far the most common type. Breast cancer is etiologically and genetically heterogeneous. Important genetic factors have been indicated by familial occurrence and bilateral involvement. Mutations at more than one locus can be involved in different families or even in the same case. Note=Mutations in BRCA1 are thought to be responsible for 45% of inherited breast cancer. Moreover, BRCA1 carriers have a 4-fold increased risk of colon cancer, whereas male carriers face a 3-fold increased risk of prostate cancer. Cells lacking BRCA1 show defects in DNA repair by homologous recombination. Defects in BRCA1 are a cause of susceptibility to breast-ovarian cancer familial type 1 (BROVCA1) [MIM:604370]. A condition associated with familial predisposition to cancer of the breast and ovaries. Characteristic features in affected families are an early age of onset of breast cancer (often before age 50), increased chance of bilateral cancers (cancer that develop in both breasts, or both ovaries, independently), frequent occurrence of breast cancer among men, increased incidence of tumors of other specific organs, such as the prostate. Note=Mutations in BRCA1 are thought to be responsible for more than 80% of inherited breast-ovarian cancer. Defects in BRCA1 are a cause of genetic susceptibility to ovarian cancer [MIM:113705].

Sequence similarities

Contains 2 BRCT domains.
Contains 1 RING-type zinc finger.

Domain

The BRCT domains recognize and bind phosphorylated pSXXF motif on proteins. The interaction with the phosphorylated pSXXF motif of FAM175A/AbraXas, recruits BRCA1 at DNA damage sites.
The RING-type zinc finger domain interacts with BAP1.

Post-translational modifications

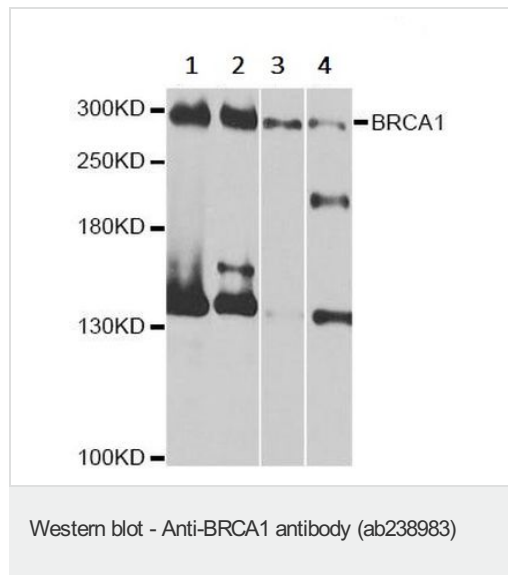
Phosphorylation at Ser-308 by STK6/AURKA is required for normal cell cycle progression from G2 to mitosis. Phosphorylated in response to IR, UV, and various stimuli that cause checkpoint activation, probably by ATM or ATR.

Autoubiquitinated, undergoes 'Lys-6'-linked polyubiquitination. 'Lys-6'-linked polyubiquitination does not promote degradation.

Cellular localization

Cytoplasm; Nucleus. Localizes at sites of DNA damage at double-strand breaks (DSBs) and recruitment to DNA damage sites is mediated by the BRCA1-A complex.

Images



All lanes : Anti-BRCA1 antibody (ab238983) at 1/1000 dilution

Lane 1 : MCF7 (human breast adenocarcinoma cell line) cell extract

Lane 2 : HeLa (human epithelial cell line from cervix adenocarcinoma) cell extract

Lane 3 : NIH/3T3 (mouse embryo fibroblast cell line) cell extract

Lane 4 : Mouse lung tissue extract

Lysates/proteins at 25 µg per lane.

Secondary

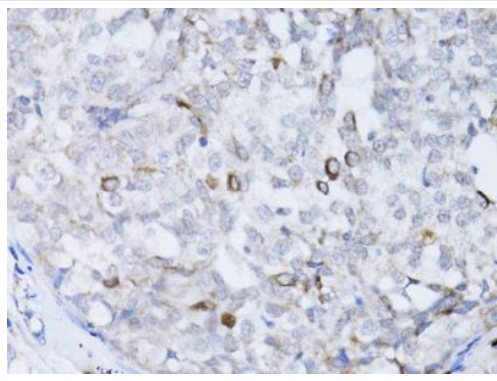
All lanes : HRP Goat Anti-Rabbit IgG (H+L) at 1/10000 dilution

Developed using the ECL technique.

Predicted band size: 207 kDa

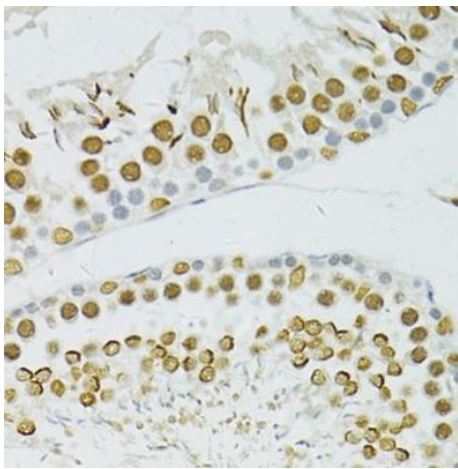
Blocking and dilution buffer: 3% nonfat dry milk in TBST.

Exposure time: 1 second.



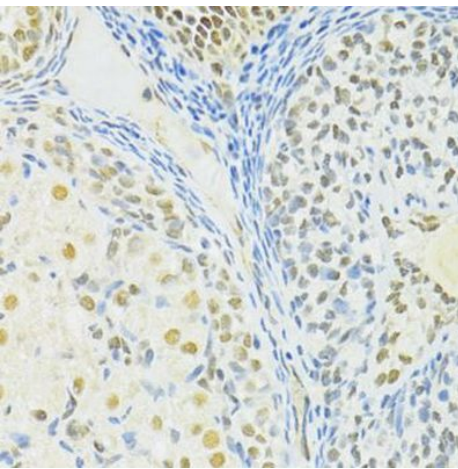
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)

Paraffin-embedded human breast cancer tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.



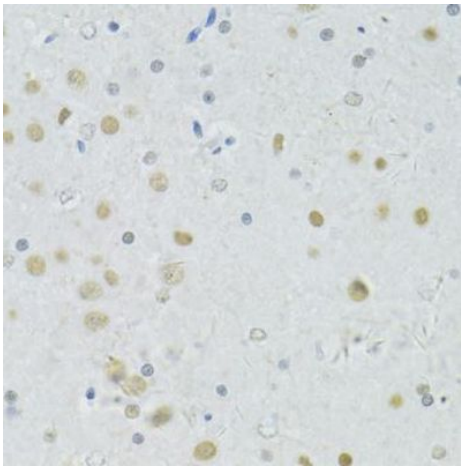
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)

Paraffin-embedded rat testis tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.



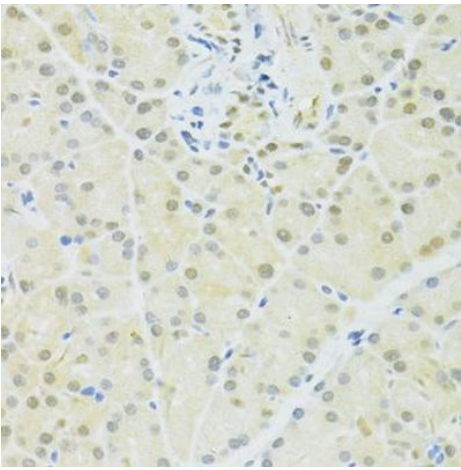
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)

Paraffin-embedded rat ovary tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.



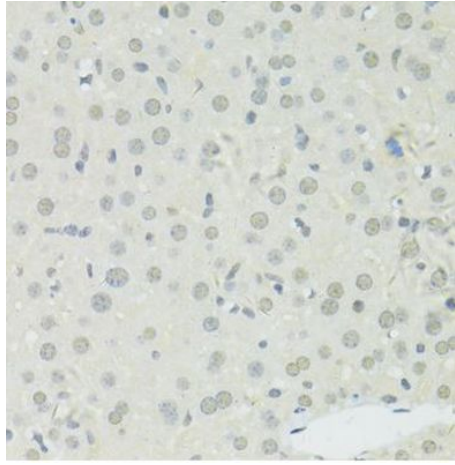
Paraffin-embedded rat brain tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)



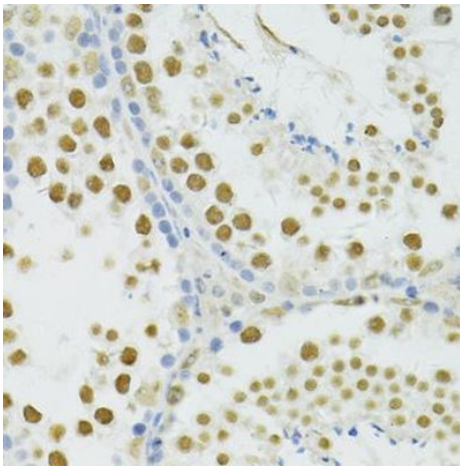
Paraffin-embedded rat pancreas tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)



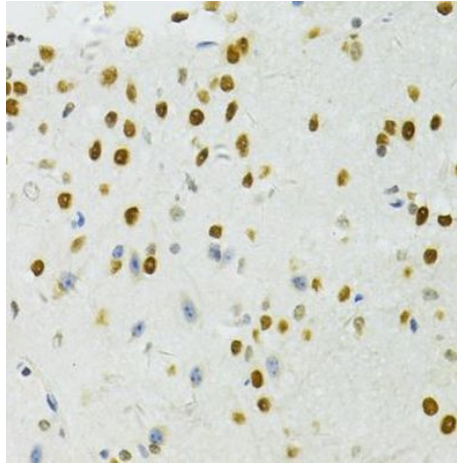
Paraffin-embedded mouse liver tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)



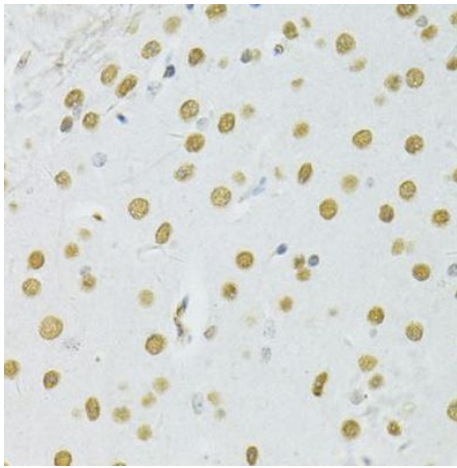
Paraffin-embedded mouse testis tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)



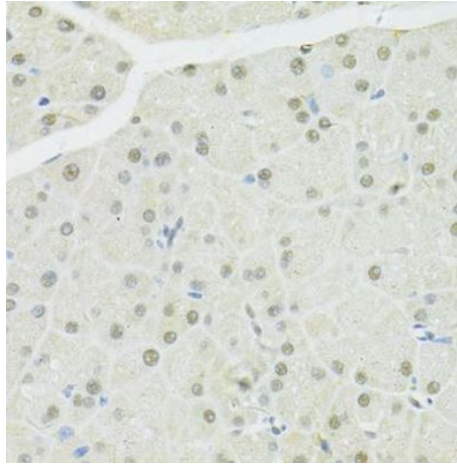
Paraffin-embedded mouse spinal cord tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)



Paraffin-embedded mouse brain tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)



Paraffin-embedded mouse pancreas tissue stained for BRCA1 using ab238983 at 1/100 dilution in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody (ab238983)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors