abcam

Product datasheet

Anti-BRCA1 antibody [MS110] - BSA and Azide free ab264518

4 Images

Overview

Product name	Anti-BRCA1 antibody [MS110] - BSA and Azide free
Description	Mouse monoclonal [MS110] to BRCA1 - BSA and Azide free
Host species	Mouse
Tested applications	**Suitable for:** IHC-P, ICC/IF, Flow Cyt (Intra) **Unsuitable for:** WB
Species reactivity	**Reacts with:** Human
Immunogen	Recombinant full length protein corresponding to Human BRCA1.
Epitope	Within the N-terminal 304 amino acids of BRCA1.
Positive control	IHC-P: Human breast carcinoma tissue. Human skin tissue. ICC/IF: MCF7 and A431 cells. Human ovarian tumor cells. Human colon cancer cells. Flow Cyt (Intra): MCF7 cells.
General notes	ab264518 is the carrier-free version of **ab16780**. This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact **orders@abcam.com**. Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications. Use our **conjugation kits** for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold. This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or

contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Storage buffer	Constituent: PBS
Carrier free	Yes
Purity	Protein G purified
Clonality	Monoclonal
Clone number	MS110
Myeloma	NS1
Isotype	IgG1
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab264518 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		Use a concentration of 5 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.
ICC/IF		Use at an assay dependent concentration.
Flow Cyt (Intra)		Use 1µg for 10^6 cells. **ab170190** - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

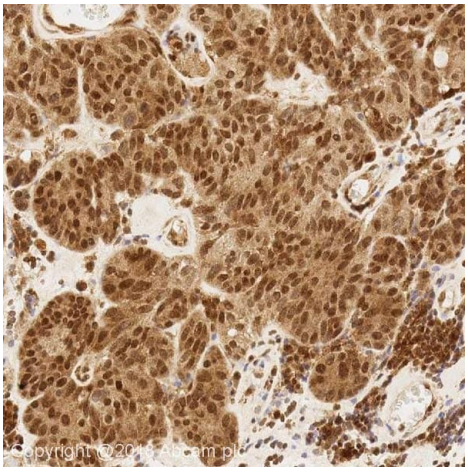
Application notes Is unsuitable for WB.

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



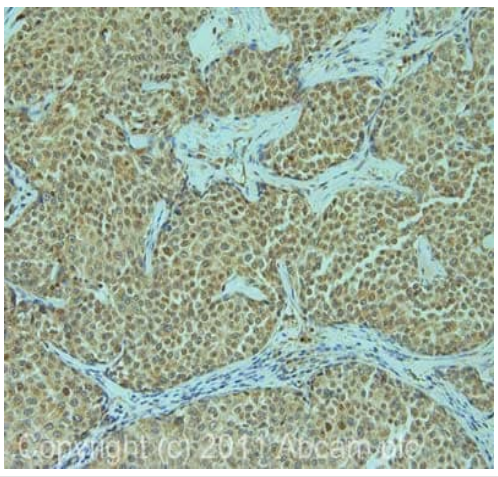
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody [MS110] - BSA and Azide free (ab264518)

IHC image of **ab16780** staining in normal human breast formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with **ab16780**, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

**Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.*

This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-Arginine, and sodium azide (**ab16780**).

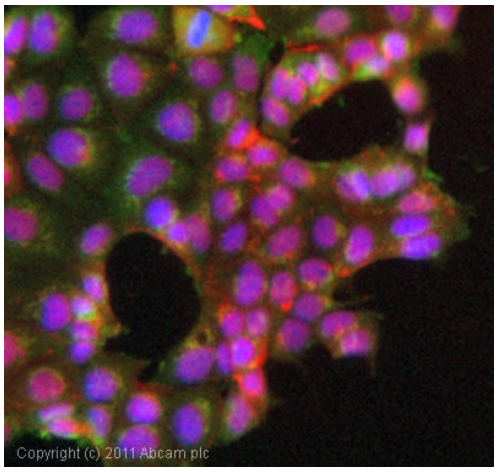


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRCA1 antibody [MS110] - BSA and Azide free (ab264518)

IHC image of **ab16780** staining in human breast carcinoma formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with **ab16780**, 5µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

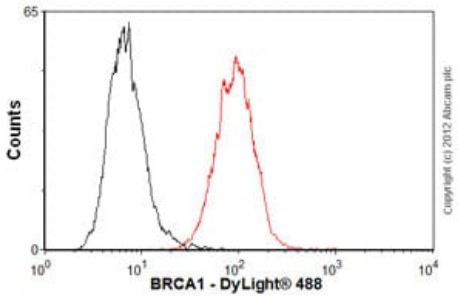
This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-Arginine, and sodium azide (**ab16780**).



Immunocytochemistry/ Immunofluorescence - Anti-BRCA1 antibody [MS110] - BSA and Azide free (ab264518)

ICC/IF image of **ab16780** stained MCF7cells. The cells were 4% PFA fixed (10 minutes) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1 hour to permeabilize the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (**ab16780**, 5 µg/ml) overnight at +4°C. The secondary antibody (green) was DyLight® 488 goat anti-mouse IgG - H&L, pre-adsorbed (**ab96879**) used at a 1/250 dilution for 1 hour. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1 hour. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43 µM.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-Arginine, and sodium azide (**ab16780**).



Flow Cytometry (Intracellular) - Anti-BRCA1 antibody [MS110] - BSA and Azide free (ab264518)

Overlay histogram showing MCF7 cells stained with **ab16780** (red line). The cells were fixed with 80% methanol (5 minutes) and then permeabilized with 0.1% PBS-Tween for 20 minutes. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (**ab16780**, 1 µg/1x10^6 cells) for 30 minutes at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (**ab96879**) at 1/500 dilution for 30 minutes at 22ºC. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (**ab91353**, 2 µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in MCF7 cells fixed with 4% paraformaldehyde (10 minutes)/permeabilized with 0.1% PBS-Tween for 20 minutes used under the same conditions.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, L-Arginine, and sodium azide (**ab16780**).

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