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Anti-BRCA1 Antibody

Catalog # AP51017

Product Information

Application	WB, IHC
Primary Accession	P38398
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	207721

Additional Information

Gene ID	672
Other Names	RNF53; Breast cancer type 1 susceptibility protein; RING finger protein 53
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human BRCA1. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

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:10500182, PubMed:12887909, PubMed:12890688, PubMed:14976165, PubMed:16818604, PubMed:17525340, PubMed:19261748). It is unclear whether it also mediates the formation of other types of polyubiquitin chains (PubMed:12890688). 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:12890688, PubMed:14976165, PubMed:20351172). Regulates centrosomal microtubule nucleation (PubMed:18056443). Required for appropriate cell cycle arrests after ionizing irradiation in both the S-phase and the G2 phase of the cell cycle (PubMed:10724175, PubMed:11836499, PubMed:12183412, PubMed:19261748). Required for FANCD2 targeting to sites of DNA damage

(PubMed:12887909). Inhibits lipid synthesis by binding to inactive phosphorylated ACACA and preventing its dephosphorylation (PubMed:16326698). 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:19369211). 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:16818604). Acts as a transcriptional activator (PubMed:20160719).

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

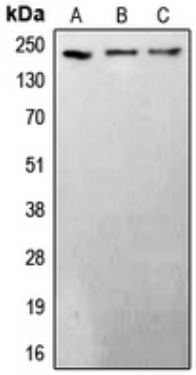
Tissue Location

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

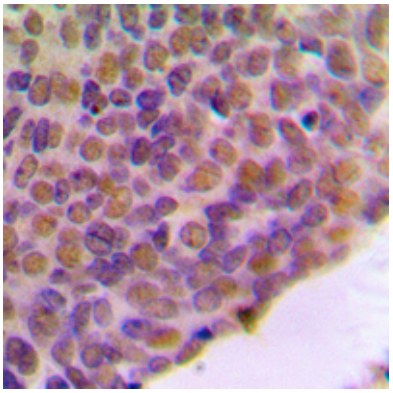
References

Miki Y.,et al.Science 266:66-71(1994).
Smith T.M.,et al.Genome Res. 6:1029-1049(1996).
Wilson C.A.,et al.Oncogene 14:1-16(1997).
Holt J.T.,et al.Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
Raymond C.K.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.

Images



Western blot analysis of BRCA1 expression in HeLa (A), mouse kidney (B), rat brain (C) whole cell lysates. (Predicted band size: 207 kD; Observed band size: 220 kD)



Immunohistochemical analysis of BRCA1 staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody 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.

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