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BRCA2 Rabbit pAb

Catalog # AP99159

Product Information

Application	IHC-P, IHC-F, IF
Reactivity	Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	384 KDa
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human BRCA2
Epitope Specificity	1-100/3329
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Contains 8 BRCA2 repeats.
SUBUNIT	Monomer and dimer. Interacts with RAD51; regulates RAD51 recruitment and function at sites of DNA repair. Interacts with DSS1. Interacts with both nonubiquitinated and monoubiquitinated FANCD2; this complex also includes XRCC3 and phosphorylated FANCG. Interacts with WDR16. Interacts with USP11. Interacts with DMC1. Part of a trimeric complex containing BRCA1, BRCA2 and PALB2. Interacts with PALB2. Interacts with BRCA1 only in the presence of PALB2 which serves as the bridging protein. Interacts with ROCK2 and NPM1.
Post-translational modifications	Phosphorylated by ATM upon irradiation-induced DNA damage. Phosphorylation by CHEK1 and CHEK2 regulates interaction with RAD51. Phosphorylation at Ser-3291 by CDK1 and CDK2 is low in S phase when recombination is active, but increases as cells progress towards mitosis; this phosphorylation prevents homologous recombination-dependent repair during S phase and G2 by inhibiting RAD51 binding. Ubiquitinated in the absence of DNA damage; this does not lead to proteasomal degradation. In contrast, ubiquitination in response to DNA damage leads to proteasomal degradation.
DISEASE	Defects in BRCA2 are a cause of susceptibility to breast cancer (BC). 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. Defects in BRCA2 are the cause of pancreatic cancer type 2 (PNCA2) [MIM:613347]. It is a malignant neoplasm of the pancreas. Tumors can arise from both the exocrine and endocrine portions of the pancreas, but 95% of them develop from the exocrine portion, including the ductal epithelium, acinar cells, connective tissue, and lymphatic tissue.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Inherited mutations in BRCA1 and this gene, BRCA2, confer increased lifetime risk of developing breast or ovarian cancer. Both BRCA1 and BRCA2 are

involved in maintenance of genome stability, specifically the homologous recombination pathway for double-strand DNA repair. The largest exon in both genes is exon 11, which harbors the most important and frequent mutations in breast cancer patients. The BRCA2 gene was found on chromosome 13q12.3 in human. The BRCA2 protein contains several copies of a 70 aa motif called the BRC motif, and these motifs mediate binding to the RAD51 recombinase which functions in DNA repair. BRCA2 is considered a tumor suppressor gene, as tumors with BRCA2 mutations generally exhibit loss of heterozygosity (LOH) of the wild-type allele. [provided by RefSeq, May 2020]

Additional Information

Other Names	BRCC2; BROVCA2; FACD; FAD; FAD1; FANCD; FANCD1; GLM3; PNCA2; XRCC11; BRCA2_HUMAN; BRCA2; Fanconi anemia group D1 protein; BRCA2 DNA repair associated; Fanconi anemia, complementation group D1; breast cancer 2, early onset; breast cancer 2; BRCA1/BRCA2-containing complex, subunit 2
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Name	BRCA2 Rabbit pAb
Function	Involved in double-strand break repair and/or homologous recombination. Binds RAD51 and potentiates recombinational DNA repair by promoting assembly of RAD51 onto single-stranded DNA (ssDNA). Acts by targeting RAD51 to ssDNA over double-stranded DNA, enabling RAD51 to displace replication protein-A (RPA) from ssDNA and stabilizing RAD51-ssDNA filaments by blocking ATP hydrolysis. May participate in S phase checkpoint activation. Binds selectively to ssDNA, and to ssDNA in tailed duplexes and replication fork structures. In concert with NPM1, regulates centrosome duplication.

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