
Product Name: FANCD2 Rabbit Polyclonal Antibody**Catalog #: APRab10827**

For research use only.

Summary

Description	Rabbit polyclonal Antibody
Host	Rabbit
Application	WB,IHC,ICC/IF,ELISA
Reactivity	Human,Mouse,Rat
Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Polyclonal
Form	Liquid
Concentration	1mg/ml
Storage	Aliquot and store at -20°C (valid for 12 months). Avoid freeze/thaw cycles.
Shipping	Ice bags
Buffer	Liquid in PBS containing 50% glycerol, 0.5% protective protein and 0.02% New type preservative N.
Purification	Affinity purification

Application

Dilution Ratio	WB 1:500-1:2000,IHC 1:100-1:300,ICC/IF 1:50-1:200,ELISA 1:5000-1:20000
Molecular Weight	166kDa

Antigen Information

Gene Name	FANCD2
Alternative Names	FANCD2; FACD; Fanconi anemia group D2 protein; Protein FACD2
Gene ID	2177.0
SwissProt ID	Q9BXW9
Immunogen	The antiserum was produced against synthesized peptide derived from human FANCD2. AA range:188-237

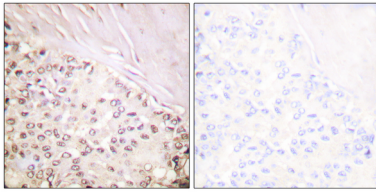
Background

Fanconi anemia complementation group D2(FANCD2) Homo sapiens The Fanconi anemia complementation group (FANC)

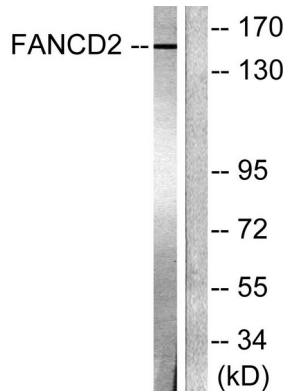
currently includes FANCA, FANCB, FANCC, FANCD1 (also called BRCA2), FANCD2, FANCE, FANCF, FANCG, FANCI, FANCL (also called BRIP1), FANCL, FANCM and FANCN (also called PALB2). The previously defined group FANCH is the same as FANCA. Fanconi anemia is a genetically heterogeneous recessive disorder characterized by cytogenetic instability, hypersensitivity to DNA crosslinking agents, increased chromosomal breakage, and defective DNA repair. The members of the Fanconi anemia complementation group do not share sequence similarity; they are related by their assembly into a common nuclear protein complex. This gene encodes the protein for complementation group D2. This protein is monoubiquitinated in response to DNA damage, resulting in its localization to nuclear foci with other proteins (BRCA1 AND BRCA2) involved in homology-directed DNA repair. **developmental stage:** Highly expressed in fetal oocytes, and in hematopoietic cells of the fetal liver and bone marrow (at protein level). **disease:** Defects in FANCD2 are a cause of Fanconi anemia (FA) [MIM:227650]. FA is a genetically heterogeneous, autosomal recessive disorder characterized by progressive pancytopenia, a diverse assortment of congenital malformations, and a predisposition to the development of malignancies. At the cellular level it is associated with hypersensitivity to DNA-damaging agents, chromosomal instability (increased chromosome breakage), and defective DNA repair. **domain:** The C-terminal 24 residues of isoform 2 are required for its function. **function:** Required for maintenance of chromosomal stability. Promotes accurate and efficient pairing of homologs during meiosis. Involved in the repair of DNA double-strand breaks, both by homologous recombination and single-strand annealing. May participate in S phase and G2 phase checkpoint activation upon DNA damage. Promotes BRCA2/FANCD1 loading onto damaged chromatin. May also be involved in B-cell immunoglobulin isotype switching. **PTM:** Monoubiquitinated on Lys-561 during S phase and upon genotoxic stress (isoform 1 and isoform 2). Deubiquitinated by USP1 as cells enter G2/M, or once DNA repair is completed. Monoubiquitination requires the FANCA-FANCB-FANCC-FANCE-FANCF-FANCG-FANCM complex, RPA1 and ATR, and is mediated by FANCL/PHF9. Ubiquitination is required for binding to chromatin, interaction with BRCA1 and BRCA2, DNA repair, and normal cell cycle progression, but not for phosphorylation on Ser-222 or interaction with MEN1. **PTM:** Phosphorylated in response to various genotoxic stresses by ATM and/or ATR. Upon ionizing radiation, phosphorylated by ATM on Ser-222 and Ser-1404. Phosphorylation on Ser-222 is required for S-phase checkpoint activation, but not for ubiquitination, foci formation, or DNA repair. In contrast, phosphorylation by ATR on other sites may be required for ubiquitination and foci formation. **subcellular location:** Concentrates in nuclear foci during S phase and upon genotoxic stress. **subunit:** Interacts directly with FANCE and FANCI. Interacts with USP1 and MEN1. The ubiquitinated form specifically interacts with BRCA1, BRCA2 and BLM. **tissue specificity:** Highly expressed in germinal center cells of the spleen, tonsil, and reactive lymph nodes, and in the proliferating basal layer of squamous epithelium of tonsil, esophagus, oropharynx, larynx and cervix. Expressed in cytotrophoblastic cells of the placenta and exocrine cells of the pancreas (at protein level). Highly expressed in testis, where expression is restricted to maturing spermatocytes.

Research Area

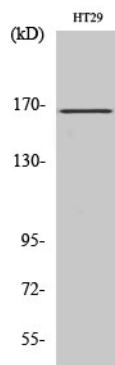
Image Data



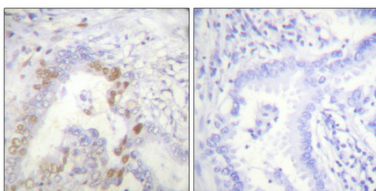
Immunohistochemistry analysis of paraffin-embedded human breast carcinoma tissue, using FANCD2 Antibody. The picture on the right is blocked with the synthesized peptide.



Western blot analysis of lysates from HT-29 cells, treated with Calyculin A 50ng/ml 30', using FANCD2 Antibody. The lane on the right is blocked with the synthesized peptide.



Western Blot analysis of various cells using FANCD2 Polyclonal Antibody diluted at 1 : 500.



Immunohistochemical analysis of paraffin-embedded Human lung cancer. Antibody was diluted at 1:100 (4°, overnight). High-pressure and temperature Tris-EDTA, pH 8.0 was used for antigen retrieval. Negative control (right) obtained from antibody was pre-absorbed by immunogen peptide.