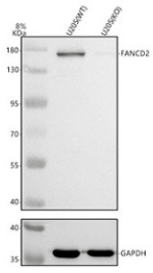
FANCD2 Antibody / FANCD2 Knockout Validated Antibody (FY13679)

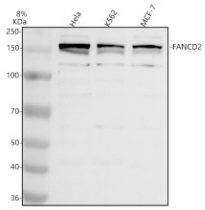
Catalog No.	Formulation	Size
FY13679	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9BXW9
Applications	Western blot: 0.5-1ug/ml ELISA: 0.1-0.5 ug/ml
Limitations	This FANCD2 Antibody / FANCD2 Knockout Validated Antibody is supplied exclusively for research use.



FANCD2 Antibody WB Validation in Human U-2 OS Wild-Type and FANCD2 Knockout Cells. Western blot analysis of human U-2 OS wild-type (WT) and FANCD2 knockout (KO) whole-cell lysates using FANCD2 Knockout Validated Antibody. A band near 165-170 kDa is detected in WT cells and is absent at the corresponding position in FANCD2 KO cells, supporting target-specific recognition. GAPDH serves as the loading control and is detected in both samples.



FANCD2 Antibody WB Analysis of Human HeLa, K562 and MCF-7 Cells. Western blot analysis of human HeLa (lane 1), K562 (lane 2), and MCF-7 (lane 3) whole-cell lysates using FANCD2 Knockout Validated Antibody at 0.5 ug/ml. A prominent band is detected above 150 kDa in all three samples. Each lane contained 30 ug of total protein. The observed migration is consistent across the tested cell lines.

Description

FANCD2 Antibody / FANCD2 Knockout Validated Antibody targets Fanconi Anemia Complementation Group D2 (FANCD2), a central component of the Fanconi anemia DNA repair pathway. FANCD2 helps maintain genome stability by coordinating cellular responses to DNA interstrand crosslinks, lesions that prevent separation of the two DNA strands and interfere with replication and transcription. Defects in this pathway are associated with Fanconi anemia, an inherited disorder characterized by bone marrow failure, developmental abnormalities, chromosomal instability, and increased cancer susceptibility.

FANCD2 forms a functional complex with FANCI, commonly referred to as the ID2 complex. Following recognition of DNA damage or replication-associated stress, the Fanconi anemia core complex promotes monoubiquitination of FANCD2 and FANCI through the activity of the FANCL ubiquitin ligase. This modification stabilizes the ID2 complex on DNA and supports recruitment and coordination of downstream repair factors. FANCD2 monoubiquitination is therefore a critical regulatory event in the cellular response to DNA interstrand crosslinks.

During DNA repair, FANCD2 participates in the coordination of nucleolytic processing, translesion DNA synthesis, and homologous recombination. Its interactions with proteins such as BRCA1, BRCA2, and RAD51 connect the Fanconi anemia pathway with broader mechanisms of genome maintenance. FANCD2 also contributes to the protection and recovery of stalled replication forks, helping prevent excessive DNA degradation and chromosome instability during replication stress.

FANCD2 function is particularly important in proliferating cells, where DNA replication increases the risk of encountering damaged templates. Loss of FANCD2 activity can cause hypersensitivity to DNA crosslinking agents, elevated chromosome breakage, and impaired recovery from replication-associated damage. Alterations affecting FANCD2 and related repair proteins have also been investigated in cancer biology, where DNA repair deficiencies can influence genomic instability and responses to genotoxic treatments.

FANCD2 Antibody supports research into the regulation of this DNA repair protein and its contribution to genome stability. FANCD2 exists in unmodified and monoubiquitinated forms, which can exhibit different electrophoretic mobilities. Distinguishing protein abundance from modification-dependent activation is important when evaluating the Fanconi anemia pathway. Understanding FANCD2 regulation provides insight into the mechanisms that protect chromosomes from DNA damage and maintain genomic integrity.

Explore related research targets in our Cell Biology Antibodies collection.

Application Notes

Users should optimize the working dilution of the FANCD2 Antibody / FANCD2 Knockout Validated Antibody for their specific experimental setup.

Immunogen

The FANCD2 Antibody was generated using e. coli-derived human Fanconi anaemia complementation group D2 recombinant protein (amino acids D71-D1428).

Storage

Once reconstituted, refrigerate the FANCD2 Antibody at 4oC for no longer than one month. For extended storage, freeze aliquots at -20oC for up to six months and avoid repeated freeze-thaw cycles.

Alternate Names

Fanconi anemia complementation group D2 antibody, Fanconi anemia group D2 protein antibody, FA complementation group D2 antibody, Protein FACD2 antibody, Fanconi anemia group D2 complementing protein antibody

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