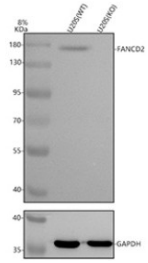
FANCD2 Monoclonal Antibody GCE-6 / Fanconi Anemia Group D2 Antibody [clone GCE-6] (FY13697)

Catalog No.	Formulation	Size
FY13697	Rabbit IgG in stabilizing components, phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol	100 ul

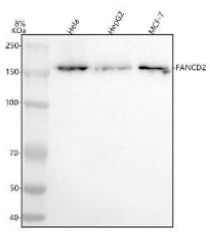
Recombinant RABBIT MONOCLONAL

Bulk quote request

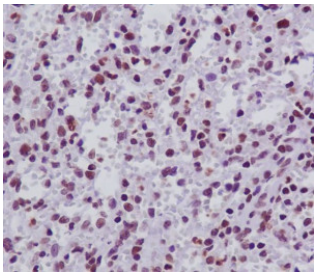
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	GCE-6
Purity	Affinity purified
UniProt	Q9BXW9
Applications	Western blot: 1:500 Immunohistochemistry (FFPE): 1:50
Limitations	This FANCD2 Monoclonal Antibody GCE-6 / Fanconi Anemia Group D2 Antibody is available for research use only.



FANCD2 Monoclonal Antibody GCE-6 WB Analysis of U2OS WT and FANCD2 KO Cell Lysates. Western blot analysis of human U2OS wild-type (lane 1) and FANCD2 knockout (lane 2) whole-cell lysates using Fanconi Anemia Group D2 Antibody clone GCE-6 at a 1:500 dilution. An immunoreactive band is detected at approximately 164 kDa in wild-type cells and is absent from the FANCD2 knockout sample, supporting antibody specificity for FANCD2. The observed molecular weight is consistent with the calculated FANCD2 molecular weight of 164.1 kDa. Each lane contains 30 ug of protein.



FANCD2 Monoclonal Antibody GCE-6 WB Analysis of HeLa, HepG2 and MCF-7 Cell Lysates. Western blot analysis of human HeLa (lane 1), HepG2 (lane 2), and MCF-7 (lane 3) whole-cell lysates using Fanconi Anemia Group D2 Antibody clone GCE-6 at a 1:1000 dilution. An immunoreactive band is detected at approximately 164 kDa, consistent with the calculated molecular weight of FANCD2 (164.1 kDa). Each lane contains 30 ug of protein.



FANCD2 Monoclonal Antibody GCE-6 IHC Staining of Human Spleen. Immunohistochemical analysis of FFPE human spleen tissue using Fanconi Anemia Group D2 Antibody clone GCE-6. Brown DAB immunoreactivity demonstrates FANCD2-associated staining within the splenic tissue. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8.

Description

FANCD2 Monoclonal Antibody GCE-6 / Fanconi Anemia Group D2 Antibody targets FANCD2, a central component of the Fanconi anemia DNA repair pathway responsible for maintaining genome stability. FANCD2 participates in the cellular response to DNA interstrand cross-links, lesions that prevent separation of the two DNA strands and interfere with replication and transcription. The protein functions in coordination with FANCI and a larger network of Fanconi anemia proteins that recognize replication-associated DNA damage and initiate repair. Defects in this pathway can cause chromosomal instability, impaired hematopoiesis, and increased susceptibility to malignancy.

FANCD2 forms a heterodimeric complex with FANCI, commonly called the ID complex. Following DNA damage or replication stress, the Fanconi anemia core complex promotes monoubiquitination of FANCD2 and FANCI. This modification stabilizes their association with damaged chromatin and supports recruitment of additional DNA repair factors. Monoubiquitinated FANCD2 accumulates in nuclear foci at sites of DNA damage, where it coordinates downstream repair events. The USP1-UAF1 deubiquitinating complex subsequently removes ubiquitin, helping regulate pathway activity and restore the proteins to their unmodified states.

The Fanconi anemia pathway operates in conjunction with nucleotide excision repair, translesion DNA synthesis, and homologous recombination. FANCD2 contributes to the processing of interstrand cross-links and helps coordinate repair intermediates generated during replication. Its interactions with proteins including BRCA1, BRCA2, and RAD51 connect Fanconi anemia signaling with homologous recombination and replication fork protection. FANCD2 also participates in responses to stalled replication forks and contributes to chromosome stability during cell division. These functions are essential for preventing the accumulation of DNA lesions and maintaining cellular viability under genotoxic stress.

Biallelic pathogenic variants in FANCD2 cause Fanconi anemia complementation group D2, a disorder associated with bone marrow failure, developmental abnormalities, and cancer predisposition. FANCD2 dysfunction has also been investigated in sporadic malignancies and responses to DNA-damaging therapies. Altered pathway activity can influence cellular sensitivity to cross-linking agents and other treatments that challenge DNA repair capacity. FANCD2 Monoclonal Antibody GCE-6 supports research into FANCD2 expression, Fanconi anemia pathway regulation, replication-associated DNA damage, and the molecular mechanisms connecting defective DNA repair with genomic instability and cancer.

For additional studies of FANCD2 expression and DNA repair pathway regulation, our FANCD2 Antibody provides complementary knockout-validated Western blot data.

Application Notes

Optimal dilution of the FANCD2 Monoclonal Antibody GCE-6 / Fanconi Anemia Group D2 Antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Fanconi Anemia Group D2 protein was used as the immunogen for the FANCD2 Monoclonal Antibody GCE-6.

Storage

The FANCD2 Monoclonal Antibody GCE-6 can be stored at -20oC.

Alternate Names

Fanconi anemia protein D2 antibody, Fanconi anemia complementation group D2 antibody, Fanconi anemia group D2 protein antibody, Fanconi anemia D2 protein antibody, FA-D2 antibody, FAD2 antibody, FANCD2 DNA repair protein antibody, Fanconi anemia pathway protein D2 antibody, FANCD2 tumor suppressor pathway antibody, FANCD2 interstrand cross-link repair protein antibody, FANCD2 DNA damage response protein antibody, FANCD2 ubiquitination pathway antibody, FANCD2 nuclear repair protein antibody

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