SANTA CRUZ BIOTECHNOLOGY, INC.

FANCI (A-7): sc-271316

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Fanconi anemia (FA) is an autosomal recessive disorder characterized by bone marrow failure, birth defects and chromosomal instability. At the cellular level, FA is characterized by spontaneous chromosomal breakage and a unique hypersensitivity to DNA cross-linking agents. FANCI (Fanconi anemia, complementation group I), also known as KIAA1794, is a 1,328 amino acid protein that localizes to the nucleus and is subject to monoubiquitination and DNA damage-dependent phosphorylation. Interacting directly with FANCD2, FANCI is required for the maintenance of chromosomal stability and is also involved in DNA recombination and repair in response to double-strand breaks and DNA cross-links. Defects in the gene encoding FANCI are associated with the pathogenesis of FA. FANCI is expressed as four alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 15.

CHROMOSOMAL LOCATION

Genetic locus: FANCI (human) mapping to 15q26.1.

SOURCE

FANCI (A-7) is a mouse monoclonal antibody raised against amino acids 1002-1103 mapping near the C-terminus of FANCI of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FANCI (A-7) is available conjugated to agarose (sc-271316 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271316 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271316 PE), fluorescein (sc-271316 FITC), Alexa Fluor® 488 (sc-271316 AF488), Alexa Fluor® 546 (sc-271316 AF546), Alexa Fluor® 594 (sc-271316 AF594) or Alexa Fluor® 647 (sc-271316 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271316 AF680) or Alexa Fluor® 790 (sc-271316 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

FANCI (A-7) is recommended for detection of FANCI of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for FANCI siRNA (h): sc-90074, FANCI shRNA Plasmid (h): sc-90074-SH and FANCI shRNA (h) Lentiviral Particles: sc-90074-V.

Molecular Weight of FANCI: 150 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Raji whole cell lysate: sc-364236 or U-2 OS cell lysate: sc-2295.

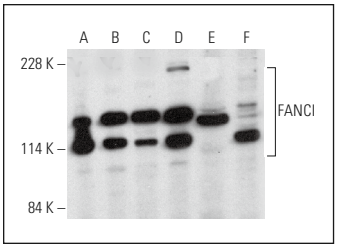
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

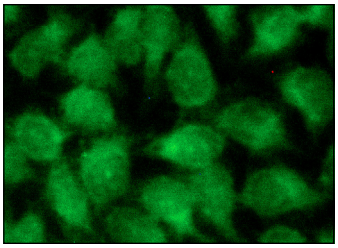
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



FANCI (A-7) HRP: sc-271316 HRP. Direct western blot analysis of FANCI expression in U-2 OS (**A**), MDA-MB-231 (**B**), Raji (**C**), HeLa (**D**), Daudi (**E**) and GA-10 (**F**) whole cell lysates.



FANCI (A-7): sc-271316. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

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2. Cheung, R.S., et al. 2017. Ubiquitination-linked phosphorylation of the FANCI S/TQ cluster contributes to activation of the Fanconi anemia I/D2 complex. Cell Rep. 19: 2432-2440.
3. Hooks, K.B., et al. 2018. New insights into diagnosis and therapeutic options for proliferative hepatoblastoma. Hepatology 68: 89-102.
4. Dubois, E.L., et al. 2019. A FANCI knockout mouse model reveals common and distinct functions for FANCI and FANCD2. Nucleic Acids Res. 47: 7532-7547.
5. Khanal, S. and Galloway, D.A. 2019. High-risk human papillomavirus oncogenes disrupt the Fanconi anemia DNA repair pathway by impairing localization and de-ubiquitination of FancD2. PLoS Pathog. 15: e1007442.
6. Li, N., et al. 2020. Cooperation of the NEIL3 and Fanconi anemia/BRCA pathways in interstrand crosslink repair. Nucleic Acids Res. 48: 3014-3028.
7. Rennie, M.L., et al. 2020. Differential functions of FANCI and FANCD2 ubiquitination stabilize ID2 complex on DNA. EMBO Rep. 21: e50133.
8. Wang, C., et al. 2020. C17orf53 is identified as a novel gene involved in inter-strand crosslink repair. DNA Repair 95: 102946.
9. Shah, R.B., et al. 2021. FANCI functions as a repair/apoptosis switch in response to DNA crosslinks. Dev. Cell 56: 2207-2222.e7.
10. Fierheller, C.T., et al. 2021. A functionally impaired missense variant identified in French Canadian families implicates FANCI as a candidate ovarian cancer-predisposing gene. Genome Med. 13: 186.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.