SANTA CRUZ BIOTECHNOLOGY, INC.

FANCF (G-4): sc-271397

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. At least eight complementation groups (A-G) have been identified and six FA genes (for subtypes A, C, D2, E, F and G) have been cloned. The FA proteins lack sequence homologies or motifs that could point to a molecular function. Phosphorylation of FANC (Fanconi anemia complementation group) proteins is thought to be important for the function of the FA pathway. FA proteins are encoded by six cloned FA genes (FANCA, FANCC, FANCD2, FANCE, FANCF, and FANCG) and cooperate in a common pathway, culminating in the monoubiquitination of FANCD2 protein and colocalization of FANCD2 and BRCA1 proteins in nuclear foci. FANCF protein is required for FANCD2 activation and appears to stabilize other subunits of the complex. The human FANCF gene maps to chromosome 11p14.3 and encodes a nuclear protein with homology to the prokaryotic RNA-binding protein ROM.

REFERENCES

1. de Winter, J.P., et al. 2000. The Fanconi anemia protein FANCF forms a nuclear complex with FANCA, FANCC and FANCG. Hum. Mol. Genet. 9: 2665-2674.
2. Yagasaki, H., et al. 2001. A cytoplasmic serine protein kinase binds and may regulate the Fanconi anemia protein FANCA. Blood 98: 3650-3657.
3. Wilson, J.B., et al. 2001. The Chinese hamster FANCG/XRCC9 mutant NM3 fails to express the monoubiquitinated form of the FANCD2 protein, is hypersensitive to a range of DNA damaging agents and exhibits a normal level of spontaneous sister chromatid exchange. Carcinogenesis 22: 1939-1946.
4. Siddique, M.A., et al. 2001. Function of the Fanconi anemia pathway in Fanconi anemia complementation group F and D1 cells. Exp. Hematol. 29: 1448-1455.
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6. Otsuki, T., et al. 2002. Phosphorylation of Fanconi anemia protein, FANCA, is regulated by Akt kinase. Biochem. Biophys. Res. Commun. 291: 628-634.
7. Taniguchi, T., et al. 2002. Molecular pathogenesis of Fanconi anemia. Int. J. Hematol. 75: 123-128.

CHROMOSOMAL LOCATION

Genetic locus: FANCF (human) mapping to 11p14.3; Fancf (mouse) mapping to 7 B5.

SOURCE

FANCF (G-4) is a mouse monoclonal antibody raised against amino acids 41-350 of FANCF of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

FANCF (G-4) is recommended for detection of FANCF of mouse, rat and 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 FANCF siRNA (h): sc-40570, FANCF siRNA (m): sc-145064, FANCF shRNA Plasmid (h): sc-40570-SH, FANCF shRNA Plasmid (m): sc-145064-SH, FANCF shRNA (h) Lentiviral Particles: sc-40570-V and FANCF shRNA (m) Lentiviral Particles: sc-145064-V.

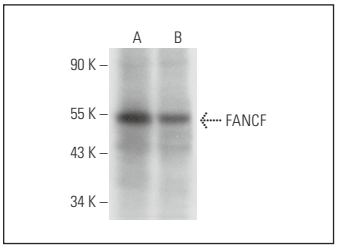
Molecular Weight of FANCF: 42 kDa.

Positive Controls: FANCF (h): 293T Lysate: sc-112398, NIH/3T3 whole cell lysate: sc-2210 or HeLa whole cell lysate: sc-2200.

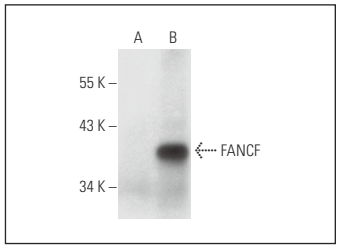
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



FANCF (G-4): sc-271397. Western blot analysis of FANCF expression in HeLa (**A**) and NIH/3T3 (**B**) whole cell lysates.



FANCF (G-4): sc-271397. Western blot analysis of FANCF expression in non-transfected: sc-117752 (**A**) and human FANCF transfected: sc-112398 (**B**) 293T whole cell lysates.

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.