

# FANCG (75-A): sc-100740

## 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 8 complementation groups (A-G) have been identified and 6 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. The cellular accumulation of FA proteins, including FANCA and FANCG, is subject to regulation by TNF $\alpha$  signaling. Phosphorylation of FANCG (Fanconi anemia complementation group) proteins is thought to be important for the function of the FA pathway. Phosphorylation of Serine 7 in FANCG is functionally important in the FA pathway. FANCG is localized majorly in the nucleus and minorly in the cytoplasm, and is highly expressed in testis and thymus.

## 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. Garcia-Higuera, I., et al. 2000. The Fanconi anemia proteins FANCA and FANCG stabilize each other and promote the nuclear accumulation of the Fanconi anemia complex. *Blood* 96: 3224-3230.
3. Yagasaki, H., et al. 2001. A cytoplasmic serine protein kinase binds and may regulate the Fanconi anemia protein FANCA. *Blood* 98: 650-3657.
4. Futaki, M., et al. 2001. Fanconi anemia protein, FANCG, is a phosphoprotein and is upregulated with FANCA after TNF $\alpha$  treatment. *Biochem. Biophys. Res. Commun.* 281: 347-351.
5. Otsuki, T., et al. 2002. Phosphorylation of Fanconi anemia protein, FANCA, is regulated by Akt kinase. *Biochem. Biophys. Res. Commun.* 291: 628-634.
6. Qiao, F., et al. 2004. Phosphorylation of Fanconi anemia (FA) complementation group G protein, FANCG, at Serine 7 is important for function of the FA pathway. *J. Biol. Chem.* 279: 46035-46045.
7. Swiss-Prot/TrEMBL (6136453). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

## CHROMOSOMAL LOCATION

Genetic locus: FANCG (human) mapping to 9p13.3.

## SOURCE

FANCG (75-A) is a mouse monoclonal antibody raised against recombinant FANCG of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

FANCG (75-A) is recommended for detection of FANCG of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 FANCG siRNA (h): sc-92893, FANCG shRNA Plasmid (h): sc-92893-SH and FANCG shRNA (h) Lentiviral Particles: sc-92893-V.

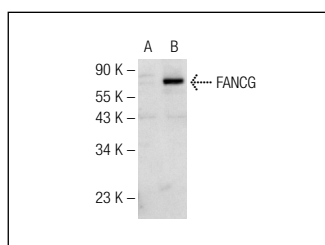
Molecular Weight of FANCG: 68 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or HeLa nuclear extract: sc-2120.

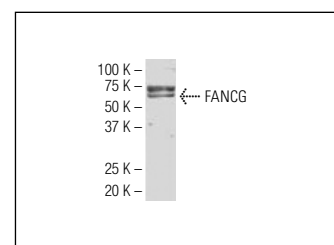
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



FANCG (75-A): sc-100740. Western blot analysis of FANCG expression in non-transfected: sc-117752 (A) and human FANCG transfected: sc-170176 (B) 293T whole cell lysates.



FANCG (75-A): sc-100740. Western blot analysis of FANCG expression in HeLa nuclear extract.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.