

FANCG (h2): 293T Lysate: sc-170908

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. The cellular accumulation of FA proteins, including FANCA and FANCG, is subject to regulation by TNF α 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., van der Weel, L., de Groot, J., Stone, S., Waisfisz, Q., Arwert, F., Scheper, R.J., Kruyt, F.A., Hoatlin, M.E. and Joenje, H. 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., Kuang, Y., Denham, J. and D'Andrea, A.D. 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., Adachi, D., Oda, T., Garcia-Higuera, I., Tetteh, N., D'Andrea, A.D., Futaki, M., Asano, S. and Yamashita, T. 2001. A cytoplasmic serine protein kinase binds and may regulate the Fanconi anemia protein FANCA. *Blood* 98: 650-6657.
4. Futaki, M., Watanabe, S., Kajigaya, S. and Liu, J.M. 2001. Fanconi anemia protein, FANCG, is a phosphoprotein and is upregulated with FANCA after TNF α treatment. *Biochem. Biophys. Res. Comm.* 281: 347-351.
5. Otsuki, T., Nagashima, T., Komatsu, N., Kirito, K., Furukawa, Y., Kobayashi Si, S., Liu, J.M. and Ozawa, K. 2002. Phosphorylation of Fanconi anemia protein, FANCA, is regulated by Akt kinase. *Biochem. Biophys. Res. Commun.* 291: 628-634.
6. Qiao, F., Mi, J., Wilson, J.B., Zhi, G., Bucheimer, N.R., Jones, N.J. and Kupfer, G.M. 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>.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

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

PRODUCT

FANCG (h2): 293T Lysate represents a lysate of human FANCG transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

FANCG (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive FANCG antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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