

FANCA (H-300): sc-28215

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 FANCA (Fanconi anemia complementation group) proteins is thought to be important for the function of the FA pathway. FANCA, also known as FACA and FANCH, associates with the Brm-related gene 1 (BRG1) product, a subunit of the SWI/SNF complex which remodels chromatin structure through a DNA-dependent ATPase activity. FANCA is mainly expressed in lymphoid tissues, testis and ovary. The amino-terminal region of the FANCA protein is required for FANCG binding, FANCC binding, nuclear localization and functional activity of the complex. The human FANCA gene maps to chromosome 16q24.3 and encodes a 1,455 amino acid protein.

REFERENCES

1. Garcia-Higuera, I., et al. 1999. Fanconi anemia proteins FANCA, FANCC, and FANCG/XRCC9 interact in a functional nuclear complex. *Mol. Cell Biol.* 19: 4866-4873.
2. 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.
3. 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.
4. van de Vrugt, H.J., et al. 2000. Cloning and characterization of murine Fanconi anemia group A gene: FANCA protein is expressed in lymphoid tissues, testis, and ovary. *Mamm. Genome* 11: 326-331.
5. Yagasaki, H., et al. 2001. A cytoplasmic serine protein kinase binds and may regulate the Fanconi anemia protein FANCA. *Blood* 98: 3650-3657.
6. Futaki, M., et al. 2001. Fanconi anemia protein, FANCG, is a phosphoprotein and is upregulated with FANCA after TNF α treatment. *Biochem. Biophys. Res. Commun.* 281: 347-351.

CHROMOSOMAL LOCATION

Genetic locus: FANCA (human) mapping to 16q24.3; Fanca (mouse) mapping to 8 E1.

SOURCE

FANCA (H-300) is a rabbit polyclonal antibody raised against amino acids 1156-1455 mapping at the C-terminus of FANCA of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

FANCA (H-300) is recommended for detection of FANCA of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

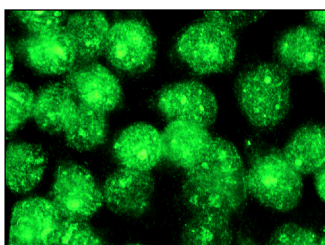
Suitable for use as control antibody for FANCA siRNA (h): sc-40567, FANCA siRNA (m): sc-40568, FANCA shRNA Plasmid (h): sc-40567-SH, FANCA shRNA Plasmid (m): sc-40568-SH, FANCA shRNA (h) Lentiviral Particles: sc-40567-V and FANCA shRNA (m) Lentiviral Particles: sc-40568-V.

Molecular Weight of FANCA: 163 kDa.

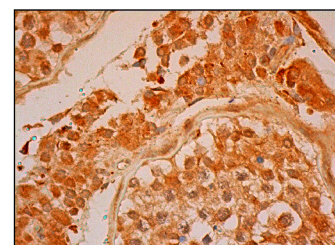
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker[™] 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz[™]: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



FANCA (H-300): sc-28215. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.



FANCA (H-300): sc-28215. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells.

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.