SANTA CRUZ BIOTECHNOLOGY, INC.

FANCC siRNA (m): sc-35355

BACKGROUND

Fanconi anemia (FA) is an autosomal recessive disorder characterized by bone marrow failure, birth defects and chromsomal instability. The FA Group C complementation group gene encodes the protein FANCC, which is located in both cytoplasmic and nuclear compartments. FANCC is expressed in a cell cycle-dependent manner, with the lowest levels at the G_1/S boundary and the highest levels in the M-phase. The FANCC protein interacts with other FA complementation group proteins as well as non-FA proteins. A human a spectrin II (designated aSpIIs) acts as a scaffold to enhance interactions between FANCC and FANCA to form a nuclear complex. Another binding partner of FANCC is the BTB/POZ domain containing protein FAZF, which is a transcriptional repressor. In hematopoietic cells expressing mutant FANCC, PKR is constitutively phosphorylated and has increased binding affinity for double-stranded RNA, which suggests that FANCC indirectly suppresses the activity of PKR. These cells are also apoptotic and are hypersensitive to IFNγ and TNFα. In addition, FANCC protein is involved in the activation of STAT1 through receptors for at least three hematopoietic growth and survival factors.

REFERENCES

1. Hoatlin, M.E., et al. 1999. A novel BTB/POZ transcriptional repressor protein interacts with the Fanconi anemia group C protein and PLZF. Blood 94: 3737-3747.
2. McMahon, L.W., et al. 1999. Human α spectrin II and the Fanconi anemia proteins FANCA and FANCC interact to form a nuclear complex. J. Biol. Chem. 274: 32904-32908.
3. Kruyt, F.A., et al. 1999. Resistance to mitomycin C requires interaction between the Fanconi anemia proteins FANCA and FANCG in the nucleus through an arginine-rich domain. J. Biol. Chem. 274: 34212-34218.
4. Kupfer, G., et al. 1999. A patient-derived mutant form of the Fanconi anemia protein, FANCA, is defective in nuclear accumulation. Exp. Hematol. 27: 587-593.

CHROMOSOMAL LOCATION

Genetic locus: Fancc (mouse) mapping to 13 B3.

PRODUCT

FANCC siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FANCC shRNA Plasmid (m): sc-35355-SH and FANCC shRNA (m) Lentiviral Particles: sc-35355-V as alternate gene silencing products.

For independent verification of FANCC (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35355A, sc-35355B and sc-35355C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

FANCC siRNA (m) is recommended for the inhibition of FANCC expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FANCC gene expression knockdown using RT-PCR Primer: FANCC (m)-PR: sc-35355-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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