SANTA CRUZ BIOTECHNOLOGY, INC.

FAT10 siRNA (m): sc-60628

BACKGROUND

FAT10, also designated ubiquitin D or diubiquitin, is a 165 amino acid protein encoded in the major histocompatibility complex (MHC) that consists of two domains which share significant homology with ubiquitin. Each domain contains two cysteines, along with a free C-terminal diglycine motif required for FAT10 conjugate formation. FAT10 is inducible by interferon-γ and tumor necrosis factor α (TNFα). The FAT10 protein interacts with MAD2, a component of the spindle checkpoint, and plays a role in antigen presentation, cytokine response, apoptosis and mitosis. It may also regulate cell growth during dendritic cell or B cell activation and development. FAT10 mRNA is expressed mainly in some dendritic cells and lymphoblastoid lines and in other specific cells subsequent to interferon-γ induction. The human FAT10 gene, designated UBD, maps to chromosome 6p22.1 and is overexpressed in the tumors of various epithelial cancers.

REFERENCES

1. Fan, W., et al. 1996. Identification of seven new human MHC class I region genes around the HLA-F locus. Immunogenetics 44: 97-103.
2. Bates, E.E., et al. 1997. Identification and analysis of a novel member of the ubiquitin family in dendritic cells and mature B cells. Eur. J. Immunol. 27: 2471-2477.
3. Liu, Y.C., et al. 1999. A MHC-encoded ubiquitin-like protein (FAT10) binds noncovalently to the spindle assembly checkpoint protein MAD2. Proc. Natl. Acad. Sci. USA 96: 4313-4318.
4. Online Mendelian Inheritance in Man, OMIM. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606050. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Hipp, M.S., et al. 2005. FAT10, a ubiquitin-independent signal for proteasomal degradation. Mol. Cell. Biol. 25: 3483-3491.
6. Zhang, D.W., et al. 2006. p53 negatively regulates the expression of FAT10, a gene upregulated in various cancers. Oncogene 25: 2318-2327.

CHROMOSOMAL LOCATION

Genetic locus: Ubd (mouse) mapping to 17 B1.

PRODUCT

FAT10 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 FAT10 shRNA Plasmid (m): sc-60628-SH and FAT10 shRNA (m) Lentiviral Particles: sc-60628-V as alternate gene silencing products.

For independent verification of FAT10 (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-60628A, sc-60628B and sc-60628C.

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

FAT10 siRNA (m) is recommended for the inhibition of FAT10 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 FAT10 gene expression knockdown using RT-PCR Primer: FAT10 (m)-PR: sc-60628-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.