SANTA CRUZ BIOTECHNOLOGY, INC.

# FGD5 siRNA (h): sc-78172

## BACKGROUND

FGD1 gene mutations result in faciogenital dysplasia, also known as FGDY or Aarskog syndrome, an X-linked developmental disorder that adversely affects the formation of multiple skeletal structures. Additional members of the FGD family include FGD2, FGD3, FGD4, FGD5 and FGD6. Also known as zinc finger FYVE domain-containing protein 23, FGD5 is a 1,462 amino acid cytosolic protein that contains a DH domain, a FYVE-type zinc finger and two PH domains. FGD family members encode guanine nucleotide exchange factors that specifically activate the Rho GTPase Cdc42. All FGD proteins contain equivalent signaling domains and a conserved structural organization, which strongly suggests that these signaling domains form a canonical core structure for members of the FGD family of RhoGEF proteins. These proteins also control essential signals required during embryonic development.

## REFERENCES


1. Delague, V., et al. 2007. Mutations in FGD4 encoding the Rho GDP/GTP exchange factor FRABIN cause autosomal recessive Charcot-Marie-Tooth type 4H. Am. J. Hum. Genet. 81: 1-16.
2. Bottani, A., et al. 2007. Unilateral focal polymicrogyria in a patient with classical Aarskog-Scott syndrome due to a novel missense mutation in an evolutionary conserved RhoGEF domain of the faciogenital dysplasia gene FGD1. Am. J. Med. Genet. A 143A: 2334-2338.
3. Diluna, M.L., et al. 2007. Cerebrovascular disease associated with Aarskog-Scott syndrome. Neuroradiology 49: 457-461.
4. Bedoyan, J.K., et al. 2008. First case of deletion of the faciogenital dysplasia 1 (FGD1) gene in a patient with Aarskog-Scott syndrome. Eur. J. Med. Genet. 52: 262-264.
5. Hayakawa, M., et al. 2008. Novel insights into FGD3, a putative GEF for Cdc42, that undergoes SCF(FWD1/β-TrCP)-mediated proteasomal degradation analogous to that of its homologue FGD1 but regulates cell morphology and motility differently from FGD1. Genes Cells 13: 329-342.
6. Bashiri, G., et al. 2008. Crystal structures of F420-dependent glucose-6-phosphate dehydrogenase FGD1 involved in the activation of the anti-tuberculosis drug candidate PA-824 reveal the basis of coenzyme and substrate binding. J. Biol. Chem. 283: 17531-17541.


## CHROMOSOMAL LOCATION

Genetic locus: FGD5 (human) mapping to 3p25.1.

## PRODUCT

FGD5 siRNA (h) 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 FGD5 shRNA Plasmid (h): sc-78172-SH and FGD5 shRNA (h) Lentiviral Particles: sc-78172-V as alternate gene silencing products.

For independent verification of FGD5 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-78172A, sc-78172B and sc-78172C.

## 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

FGD5 siRNA (h) is recommended for the inhibition of FGD5 expression in human 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 FGD5 gene expression knockdown using RT-PCR Primer: FGD5 (h)-PR: sc-78172-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.

## PROTOCOLS

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