SANTA CRUZ BIOTECHNOLOGY, INC.

# FAM20C siRNA (m): sc-145034

## BACKGROUND

The FAM20 proteins are a family of secreted proteins that regulate differentiation and function of hematopoietic and other tissues. FAM20C, also known as DMP4 (Dentin matrix protein 4), is a 570 amino acid secreted protein that binds calcium and may play a role in dentin mineralization. Defects in the gene encoding FAM20C are the cause of Raine syndrome (lethal osteosclerotic bone dysplasia), an autosomal recessive osteosclerotic bone dysplasia, that is characterized by generalized osteosclerosis, microencephaly and craniofacial dysplasia. Usually, affected individuals survive only days or weeks. The mutations of the FAM20C gene include four nonsynomous base changes and four splice-site changes that have a detrimental affect on splicing.

## REFERENCES


1. Nalbant, D., et al. 2005. FAM20: an evolutionarily conserved family of secreted proteins expressed in hematopoietic cells. BMC Genomics 6: 11.
2. Simpson, M.A., et al. 2007. Mutations in FAM20C are associated with lethal osteosclerotic bone dysplasia (Raine syndrome), highlighting a crucial molecule in bone development. Am. J. Hum. Genet. 81: 906-912.
3. Hao, J., et al. 2007. Dentin matrix protein 4, a novel secretory calcium-binding protein that modulates odontoblast differentiation. J. Biol. Chem. 282: 15357-15365.
4. Simpson, M.A., et al. 2009. Mutations in FAM20C also identified in non-lethal osteosclerotic bone dysplasia. Clin. Genet. 75: 271-276.
5. Fradin, M., et al. 2010. Osteosclerotic bone dysplasia in siblings with a Fam20C mutation. Clin Genet. 80: 177-183.
6. Kochar, G.S., et al. 2010. Raine syndrome: a clinical, radiographic and genetic investigation of a case from the Indian subcontinent. Clin. Dysmorphol. 19: 153-156.
7. Wang, X., et al. 2010. Expression of FAM20C in the osteogenesis and odontogenesis of mouse. J. Histochem. Cytochem. 58: 957-967.


## CHROMOSOMAL LOCATION

Genetic locus: Fam20c (mouse) mapping to 5 G2.

## PRODUCT

FAM20C 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 FAM20C shRNA Plasmid (m): sc-145034-SH and FAM20C shRNA (m) Lentiviral Particles: sc-145034-V as alternate gene silencing products.

For independent verification of FAM20C (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-145034A, sc-145034B and sc-145034C.

## 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

FAM20C siRNA (m) is recommended for the inhibition of FAM20C 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 FAM20C gene expression knockdown using RT-PCR Primer: FAM20C (m)-PR: sc-145034-PR (20 µl, 519 bp). 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.