

# RBM20 siRNA (h): sc-90317

## BACKGROUND

RBM20 (RNA-binding motif protein 20), also known as probable RNA-binding protein 20, is a 1,125 amino acid protein that contains 1 RRM (RNA recognition motif) domain. RBM20 features characteristic of the RNA binding SR protein family that assembles in the spliceosome. The RBM20 gene contains fourteen coding exons, maps to chromosome 10q25.2 and belongs to the large RBM family. The RBM family consists of 20-40 genes and pseudogenes scattered over the long arm and the proximal short arm of the Y chromosome. RBM20 expression is highest in the heart followed by skeletal muscle tissues. Defects in RBM20 are the cause of CMD1DD (cardiomyopathy dilated type 1DD), which is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. RBM20 mutations, especially on exon 9, are associated with young age at diagnosis of CMD, end-stage heart failure and high mortality.

## REFERENCES

- Chandley, A.C. 1998. Chromosome anomalies and Y chromosome micro-deletions as causal factors in male infertility. *Hum. Reprod.* 13: 45-50.
- Sutherland, L.C., Rintala-Maki, N.D., White, R.D. and Morin, C.D. 2005. RNA binding motif (RBM) proteins: a novel family of apoptosis modulators? *J. Cell. Biochem.* 94: 5-24.
- Brauch, K.M., Karst, M.L., Herron, K.J., de Andrade, M., Pellikka, P.A., Rodeheffer, R.J., Michels, V.V. and Olson, T.M. 2009. Mutations in ribonucleic acid binding protein gene cause familial dilated cardiomyopathy. *J. Am. Coll. Cardiol.* 54: 930-941.
- Macrae, C.A. and McKenna, W.J. 2009. Splicing and dilated cardiomyopathy one gene to rule them all? *J. Am. Coll. Cardiol.* 54: 942-943.
- Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 613171. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Johnston, J.J., Teer, J.K., Cherukuri, P.F., Hansen, N.F., Loftus, S.K., Chong, K., Mullikin, J.C. and Biesecker, L.G. 2010. Massively parallel sequencing of exons on the X chromosome identifies RBM10 as the gene that causes a syndromic form of cleft palate. *Am. J. Hum. Genet.* 86: 743-748.
- Li, D., Morales, A., Gonzalez-Quintana, J., Norton, N., Siegfried, J.D., Hofmeyer, M. and Hershberger, R.E. 2010. Identification of novel mutations in RBM20 in patients with dilated cardiomyopathy. *Clin. Transl. Sci.* 3: 90-97.
- Dellefave, L. and McNally, E.M. 2010. The genetics of dilated cardiomyopathy. *Curr Opin Cardiol.* 25: 198-204.
- SWISS-PROT/TrEMBL (Q5T481). World Wide Web URL: <http://www.uniprot.org/uniprot/Q5T481>

## CHROMOSOMAL LOCATION

Genetic locus: RBM20 (human) mapping to 10q25.2.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

RBM20 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RBM20 shRNA Plasmid (h): sc-90317-SH and RBM20 shRNA (h) Lentiviral Particles: sc-90317-V as alternate gene silencing products.

For independent verification of RBM20 (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-90317A, sc-90317B and sc-90317C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

RBM20 siRNA (h) is recommended for the inhibition of RBM20 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  $\mu$ M in 66  $\mu$ l. 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 RBM20 gene expression knockdown using RT-PCR Primer: RBM20 (h)-PR: sc-90317-PR (20  $\mu$ l). 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.