

## ZBPB1 siRNA (m): sc-155826

### BACKGROUND

ZBPB1 (zona pellucida-binding protein 1) is a 351 amino acid gene product belonging to the zona pellucida-binding protein Sp38 family. ZBPB1 is a secreted protein believed to be involved in gamete interaction during fertilization. ZBPB1 is found on chromosome 7p12.2 which is about 158 million bases long, encodes over 1,000 genes and makes up about 5% of the human genome. Chromosome 7 has been linked to osteogenesis imperfecta, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome. The deletion of a portion of the q arm of chromosome 7 is associated with Williams-Beuren syndrome, a condition characterized by mild mental retardation, an unusual comfort and friendliness with strangers and an elfin appearance. Deletions of portions of the q arm of chromosome 7 are also seen in a number of myeloid disorders including cases of acute myelogenous leukemia and myelodysplasia.

### REFERENCES

1. Yu, Y., et al. 2006. The extracellular protein coat of the inner acrosomal membrane is involved in zona pellucida binding and penetration during fertilization: characterization of its most prominent polypeptide (IAM38). *Dev. Biol.* 290: 32-43.
2. Lin, Y.N., et al. 2007. Loss of zona pellucida binding proteins in the acrosomal matrix disrupts acrosome biogenesis and sperm morphogenesis. *Mol. Cell. Biol.* 27: 6794-6805.
3. Yu, Y., et al. 2009. The origin and assembly of a zona pellucida binding protein, IAM38, during spermiogenesis. *Microsc. Res. Tech.* 72: 558-565.
4. Song, C., et al. 2010. Molecular cloning of pig ZBPB2 and mRNA expression of ZBPB1 and ZBPB2 in reproductive tracts of boars. *Anim. Reprod. Sci.* 122: 229-235.
5. Manásková-Postlerová, P., et al. 2011. Biochemical and binding characteristics of boar epididymal fluid proteins. *J. Chromatogr. B Analyt. Technol. Biomed. Life Sci.* 879: 100-106.
6. Clark, G.F. 2011. The molecular basis of mouse sperm-zona pellucida binding: a still unresolved issue in developmental biology. *Reproduction* 142: 377-381.

### CHROMOSOMAL LOCATION

Genetic locus: Zbp (mouse) mapping to 11 A1.

### PRODUCT

ZBPB1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZBPB1 shRNA Plasmid (m): sc-155826-SH and ZBPB1 shRNA (m) Lentiviral Particles: sc-155826-V as alternate gene silencing products.

For independent verification of ZBPB1 (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-155826A, sc-155826B and sc-155826C.

### 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

ZBPB1 siRNA (m) is recommended for the inhibition of ZBPB1 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  $\mu$ 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.

### GENE EXPRESSION MONITORING

ZBPB1 (F-12): sc-393152 is recommended as a control antibody for monitoring of ZBPB1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ZBPB1 gene expression knockdown using RT-PCR Primer: ZBPB1 (m)-PR: sc-155826-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.

### PROTOCOLS

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