SANTA CRUZ BIOTECHNOLOGY, INC.

EBF4 siRNA (m): sc-143279

BACKGROUND

B lymphocyte maturation is an intricate process that requires a distinct set of transcription factors with respect to the stage of cell differentiation and cell lineage. Among the transcriptional regulators involved in the early stages of B cell development, EBF4 (early B-cell factor 4), also known as transcription factor COE4, is a 602 amino acid nuclear protein that binds the Olf1 site, the consensus sequence 5'-ATTCCCNNGGGAATT-3'. Like other members of the Olf-1/EBF (O/E) family of transcription factors, EBF4 may play an important role in B cell maturation and neural development. There are two isoforms of EBF4 that exist as a result of alternative splicing events. In regards to transcriptional activation of a reporter construct, all EBF4 isoforms are weaker than EBF, EBF2 and EBF3. By interacting with other O/E family members, EBF4 most likely forms homodimers or heterodimers to regulate gene expression.

REFERENCES

1. Wang, M.M., et al. 1993. Molecular cloning of the olfactory neuronal transcription factor Olf-1 by genetic selection in yeast. Nature 364: 121-126.
2. Hagman, J., et al. 1995. EBF contains a novel zinc coordination motif and multiple dimerization and transcriptional activation domains. EMBO J. 14: 2907-2916.
3. Lin, H., et al. 1995. Failure of B-cell differentiation in mice lacking the transcription factor EBF. Nature 376: 263-267.
4. Sigvardsson, M., et al. 1997. EBF and E47 collaborate to induce expression of the endogenous immunoglobulin surrogate light chain genes. Immunity 7: 25-36.
5. Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVI. The complete sequences of 150 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 7: 65-73.
6. Sigvardsson, M. 2000. Overlapping expression of early B-cell factor and basic helix-loop-helix proteins as a mechanism to dictate B-lineage-specific activity of the Lambda 5 promoter. Mol. Cell. Biol. 20: 3640-3654.
7. Wang, S.S., et al. 2002. Cloning of a novel Olf-1/EBF-like gene, O/E-4, by degenerate oligo-based direct selection. Mol. Cell. Neurosci. 20: 404-414.
8. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 609935. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Ebf4 (mouse) mapping to 2 F1.

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.

PRODUCT

EBF4 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 EBF4 shRNA Plasmid (m): sc-143279-SH and EBF4 shRNA (m) Lentiviral Particles: sc-143279-V as alternate gene silencing products.

For independent verification of EBF4 (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-143279A, sc-143279B and sc-143279C.

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

EBF4 siRNA (m) is recommended for the inhibition of EBF4 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 EBF4 gene expression knockdown using RT-PCR Primer: EBF4 (m)-PR: sc-143279-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.