

EBF1 siRNA (h): sc-106965

BACKGROUND

The mammalian olfactory system is composed of special sensory neurons within the olfactory epithelium. Mature sensory neurons express several olfactory-specific genes, many of which produce gene products essential to the odorant signal transduction cascade. Early B cell factor 1 (EBF1), also known as COLLIER/OLF1/EBF transcription factor 1 (COE1) or olfactory neuronal transcription factor 1 (OLF1), is a 591 amino acid protein belonging to the COE family. EBF1 has been identified as an olfactory-specific factor, which binds to olfactory-specific genes and coordinates their expression. EBF1 is also a tissue-specific and differentiation stage-specific factor that is involved in the development of B cells. Localized to the nucleus, EBF1 forms a homodimer or a heterodimer with a related family member. Activity of EBF1 can be blocked by interaction with ZNF423 and ZNF521, which prevent binding of EBF1 to DNA. EBF1 is expressed as two isoforms produced by alternative splicing.

REFERENCES

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- Merluzzi, S., et al. 2004. CD40 stimulation induces Pax-5/BSAP and EBF activation through a APE/Ref-1-dependent redox mechanism. *J. Biol. Chem.* 279: 1777-1786.
- Martínez, A., et al. 2005. Early B cell factor gene association with multiple sclerosis in the Spanish population. *BMC Neurol.* 5: 19.
- Smith, E.M., et al. 2005. Inhibition of EBF function by active notch signaling reveals a novel regulatory pathway in early B cell development. *Blood* 106: 1995-2001.
- Akerblad, P., et al. 2005. Gene expression analysis suggests that EBF-1 and PPAR γ 2 induce adipogenesis of NIH-3T3 cells with similar efficiency and kinetics. *Physiol. Genomics* 23: 206-216.

CHROMOSOMAL LOCATION

Genetic locus: EBF1 (human) mapping to 5q33.3.

PRODUCT

EBF1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see EBF1 shRNA Plasmid (h): sc-106965-SH and EBF1 shRNA (h) Lentiviral Particles: sc-106965-V as alternate gene silencing products.

For independent verification of EBF1 (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-106965A, sc-106965B and sc-106965C.

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

APPLICATIONS

EBF1 siRNA (h) is recommended for the inhibition of EBF1 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 μ M in 66 μ 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 EBF1 gene expression knockdown using RT-PCR Primer: EBF1 (h)-PR: sc-106965-PR (20 μ l, 361 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Glaser, L.V., et al. 2017. EBF1 binds to EBNA2 and promotes the assembly of EBNA2 chromatin complexes in B cells. *PLoS Pathog.* 13: e1006664.

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.