

EBF (N-20): sc-15886

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, early B cell factor (EBF), also designated olfactory neuronal transcription factor 1 (OLF1), targets promoter elements for B lymphoid kinase (Blk) and genes encoding portions of the early stage B cell receptors (BCR), which are necessary for initiation of Ig light chain gene recombination and Src kinase (Blk) signaling. EBF is a basic helix-loop-helix (bHLH) homodimeric transcription factor composed of two subunits that interact with the core DNA sequence, CCCNNGGG, through a DNA recognition domain containing a zinc-coordination motif. Promoter elements to certain neuron-specific genes encoding olfactory-related proteins have been shown to contain EBF binding sites.

REFERENCES

1. Wang, M.M., et al. 1993. Molecular cloning of the olfactory neuronal transcription factor OLF1 by genetic selection in yeast. *Nature* 364: 121-126.
2. Lin, H., et al. 1995. Failure of B cell differentiation in mice lacking the transcription factor EBF. *Nature* 376: 263-267.
3. Hagman, J., et al. 1995. EBF contains a novel zinc-coordination motif and multiple dimerization and transcriptional activation domains. *EMBO J.* 14: 2907-2916.
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. Akerblad, P., et al. 1999. The B29 (immunoglobulin β -chain) gene is a genetic target for early B cell factor. *Mol. Cell. Biol.* 19: 392-401.
6. Akerblad, P., et al. 1999. Early B cell factor is an activator of the B lymphoid kinase promoter in early B cell development. *J. Immunol.* 163: 5453-5461.

CHROMOSOMAL LOCATION

Genetic locus: EBF3 (human) mapping to 10q26.3, EBF1 (human) mapping to 5q33.3; Ebf1 (mouse) mapping to 11 B1.1.

SOURCE

EBF (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of EBF of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-15886 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

EBF (N-20) is recommended for detection of EBF1 and EBF3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

EBF (N-20) is also recommended for detection of EBF1 and EBF3 in additional species, including bovine and porcine.

Molecular Weight of EBF: 80 kDa.

Positive Controls: Ramos nuclear extract: sc-2153, A549 cell lysate: sc-2413 or 3611-RF nuclear extract : sc-2143.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Cho, S.J., et al. 2005. A Stat5-overlapping site is critical for the IgJ enhancer activity in the plasma cells and bound by a ubiquitous protein. *Biochem. Biophys. Res. Commun.* 338: 1897-1905.
2. Kim, J.Y., et al. 2006. The HSS3/4 enhancer of Cr1z1-IgJ locus is another target of EBF in the pre-B cell stage of B cell development. *Immunol. Lett.* 107: 63-70.
3. Dunne, J., et al. 2012. AML1/ETO and POU4F1 synergy drives B-lymphoid gene expression typical of t(8;21) acute myeloid leukemia. *Leukemia* 26: 1131-1135.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **EBF (C-8): sc-137065** or **EBF (D-8): sc-137039**, our highly recommended monoclonal alternatives to EBF (N-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **EBF (C-8): sc-137065**.