SANTA CRUZ BIOTECHNOLOGY, INC.

EBF (C-20): sc-15888

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.

CHROMOSOMAL LOCATION

Genetic locus: EBF3 (human) mapping to 10q26.3, EBF2 (human) mapping to 8p21.2; Ebf1 (mouse) mapping to 11 B1.1.

SOURCE

EBF (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of EBF of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-15888 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

EBF (C-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), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 (C-20) is also recommended for detection of EBF1 and EBF3 in additional species, including equine, canine, bovine, porcine and avian.

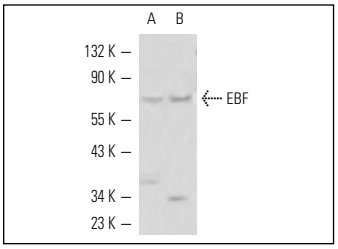
Molecular Weight of EBF: 80 kDa.

Positive Controls: Ramos nuclear extract: sc-2153, 3611-RF nuclear extract: sc-2143 or human PBL whole cell lysate.

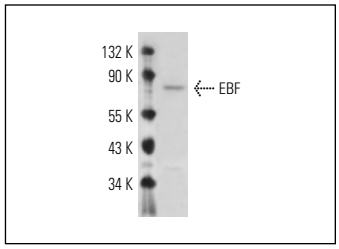
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



EBF (C-20): sc-15888. Western blot analysis of EBF expression in Ramos (**A**) and 3611-RF (**B**) nuclear extracts.



EBF (C-20): sc-15888. Western blot analysis of EBF expression in human PBL whole cell lysate.

SELECT PRODUCT CITATIONS

1. Akerblad, P., et al. 2002. Early B cell factor (O/E-1) is a promoter of adipogenesis and involved in control of genes important for terminal adipocyte differentiation. Mol. Cell. Biol. 22: 8015-8025.
2. Zhang, Z., et al. 2003. Enforced expression of EBF in hematopoietic stem cells restricts lymphopoiesis to the B cell lineage. EMBO J. 22: 4759-4769.
3. Kim, J.Y., et al. 2006. The HSS3/4 enhancer of Crlz1-IgJ locus is another target of EBF in the pre-B cell stage of B cell development. Immunol. Lett. 107: 63-70.
4. Zhao, L.Y., et al. 2006. An EBF3-mediated transcriptional program that induces cell cycle arrest and apoptosis. Cancer Res. 66: 9445-9452.
5. 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.

STORAGE

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