SANTA CRUZ BIOTECHNOLOGY, INC.

EBF (H-6): sc-398173

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.
7. 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 λ5 promoter. Mol. Cell. Biol. 20: 3640-3654.

CHROMOSOMAL LOCATION

Genetic locus: EBF1 (human) mapping to 5q33.3, EBF3 (human) mapping to 10q26.3; Ebf1 (mouse) mapping to 11 B1.1, Ebf3 (mouse) mapping to 7 F4.

SOURCE

EBF (H-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 376-405 within an internal region of EBF of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398173 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

EBF (H-6) is recommended for detection of EBF1 and EBF3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 (H-6) is also recommended for detection of EBF1 and EBF3 in additional species, including equine, canine, bovine, porcine and avian.

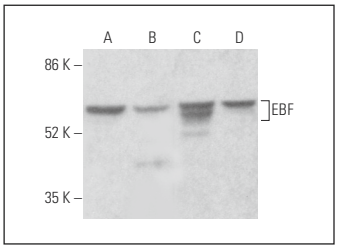
Molecular Weight of EBF: 80 kDa.

Positive Controls: EBF1 (h4): 293T Lysate: sc-177162, A549 cell lysate: sc-2413 or IMR-32 cell lysate: sc-2409.

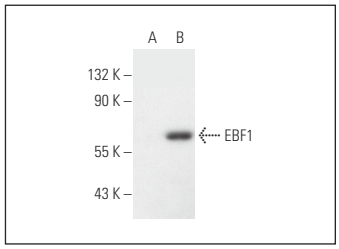
RECOMMENDED SUPPORT REAGENTS

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

DATA



EBF (H-6): sc-398173. Western blot analysis of EBF expression in A549 (**A**), IMR-32 (**B**), 3611-RF (**C**) and NIH/3T3 (**D**) whole cell lysates.



EBF (H-6): sc-398173. Western blot analysis of EBF1 expression in non-transfected: sc-117752 (**A**) and human EBF1 transfected: sc-177162 (**B**) 293T whole cell lysates.

STORAGE

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

RESEARCH USE

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