SANTA CRUZ BIOTECHNOLOGY, INC.

TFEB (h): 293T Lysate: sc-110109

BACKGROUND

The DNA-binding factor TFE3 contains adjacent helix-loop-helix (HLH) and leucine zipper (LZ) domains flanked by an upstream basic region. These protein motifs are frequently observed in other transcription factors and are particularly common to members of the Myc family. TFE3 is ubiquitously expressed and can directly associate with DNA as either a homodimer or a heterodimer formed with two related proteins, TFEB or TFEC. TFE3 binds to and activates the microE3 motif of the immunoglobulin heavy-chain enhancer to induce B cell-specific gene transcription and DNA recombination. TFEB binds to the major late promoter of Adenovirus and specifically associates with DNA as both a homodimer and a heterodimer with TFE3. TFEB is expressed at low levels in the embryo but at high levels in the trophoblast cells of the placenta, where it plays a critical role in regulating normal vascularization of the placenta. TFEC shares a bHLH/LZ structure with TFE3 and a closely related protein microphthalmia-associated transcription factor (MITF), which is critically involved in melanocyte differentiation. Unlike TFE3, the expression of TFEC is largely restricted to fibroblasts, myoblasts, chondrosarcoma cells and myeloma cells.

REFERENCES

1. Beckmann, H., et al. 1990. TFE3: a helix-loop-helix protein that activates transcription through the immunoglobulin enhancer μE3 motif. Genes Dev. 4: 167-179.
2. Fisher, D.E., et al. 1991. TFEB has DNA-binding and oligomerization properties of a unique helix-loop-helix/leucine-zipper family. Genes Dev. 5: 2342-2352.
3. Kerkhoff, E., et al. 1991. Sequence-specific DNA binding by Myc proteins. Proc. Natl. Acad. Sci. USA 88: 4323-4327.
4. Artandi, S.E., et al. 1994. The basic helix-loop-helix-zipper domain of TFE3 mediates enhancer-promoter interaction. Mol. Cell. Biol. 14: 7704-7716.
5. Yasumoto, K., et al. 1997. Molecular cloning of cDNA encoding a human TFEC isoform, a newly identified transcriptional regulator. Biochim. Biophys. Acta 1353: 23-31.
6. Steingrimsson, E., et al. 1998. The bHLH-Zip transcription factor TFEB is essential for placental vascularization. Development 125: 4607-4616.

CHROMOSOMAL LOCATION

Genetic locus: TFEB (human) mapping to 6p21.1.

PRODUCT

TFEB (h): 293T Lysate represents a lysate of human TFEB transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

TFEB (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive TFEB antibodies. Recommended use: 10-20 µl per lane.

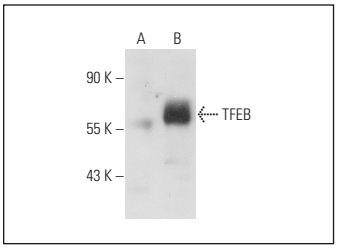
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

TFEB (C-6): sc-166736 is recommended as a positive control antibody for Western Blot analysis of enhanced human TFEB expression in TFEB transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



TFEB (C-6): sc-166736. Western blot analysis of TFEB expression in non-transfected: sc-117752 (**A**) and human TFEB transfected: sc-110109 (**B**) 293T whole cell lysates.

PROTOCOLS

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