SANTA CRUZ BIOTECHNOLOGY, INC.

TFEB (V-17): sc-11004

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The Power to Question

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 associates with DNA as either homodimers or heterodimers 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 muE3 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.

CHROMOSOMAL LOCATION

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

SOURCE

TFEB (V-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TFEB 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-11004 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-11004 P, (100 µg 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.

RESEARCH USE

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

APPLICATIONS

TFEB (V-17) is recommended for detection of TFEB of 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).

TFEB (V-17) is also recommended for detection of TFEB in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TFEB siRNA (h): sc-38509, TFEB shRNA Plasmid (h): sc-38509-SH and TFEB shRNA (h) Lentiviral Particles: sc-38509-V.

TFEB (V-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of TFEB: 65 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

SELECT PRODUCT CITATIONS

1. Argani, P., et al. 2005. Renal carcinomas with the t(6;11)(p21;q12): clinicopathologic features and demonstration of the specific α-TFEB gene fusion by immunohistochemistry, RT-PCR, and DNA PCR. Am. J. Surg. Pathol. 29: 230-240.
2. Esumi, N., et al. 2007. VMD2 promoter requires two proximal E-box sites for its activity *in vivo* and is regulated by the MITF-TFE family. J. Biol. Chem. 282: 1838-1850.
3. Tsuda, M., et al. 2007. TFE3 fusions activate MET signaling by transcriptional up-regulation, defining another class of tumors as candidates for therapeutic MET inhibition. Cancer Res. 67: 919-929.
4. Haudebourg, J., et al. 2010. Strength of molecular cytogenetic analyses for adjusting the diagnosis of renal cell carcinomas with both clear cells and papillary features: a study of three cases. Virchows Arch. 457: 397-404.
5. Rao, Q., et al. 2011. Renal cell carcinoma in children and young adults: clinicopathological, immunohistochemical, and VHL gene analysis of 46 cases with follow-up. Int. J. Surg. Pathol. 19: 170-179.
6. Inamura, K., et al. 2012. Diverse fusion patterns and heterogeneous clinicopathologic features of renal cell carcinoma with t(6;11) translocation. Am. J. Surg. Pathol. 36: 35-42.
7. Zhong, M., et al. 2012. Translocation renal cell carcinomas in adults: a single-institution experience. Am. J. Surg. Pathol. 36: 654-662.