SANTA CRUZ BIOTECHNOLOGY, INC.

TFE3 (H-300): sc-28733

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: TFE3 (human) mapping to Xp11.23; Tfe3 (mouse) mapping to X A1.1.

SOURCE

TFE3 (H-300) is a rabbit polyclonal antibody raised against amino acids 444-743 mapping at the C-terminus of TFE3 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.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-28733 X, 200 µg/0.1 ml.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

TFE3 (H-300) is recommended for detection of TFE3 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).

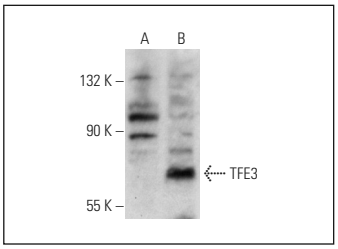
Suitable for use as control antibody for TFE3 siRNA (h): sc-38507, TFE3 siRNA (m): sc-38508, TFE3 shRNA Plasmid (h): sc-38507-SH, TFE3 shRNA Plasmid (m): sc-38508-SH, TFE3 shRNA (h) Lentiviral Particles: sc-38507-V and TFE3 shRNA (m) Lentiviral Particles: sc-38508-V.

TFE3 (H-300) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

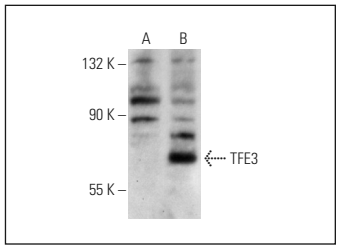
Molecular Weight of TFE3: 59 kDa.

Positive Controls: TFE3 (h): 293T Lysate: sc-178032.

DATA



TFE3 (H-300): sc-28733. Western blot analysis of TFE3 expression in non-transfected: sc-117752 (**A**) and human TFE3 transfected: sc-178032 (**B**) 293T whole cell lysates.



TFE3 (H-300): sc-28733. Western blot analysis of TFE3 expression in non-transfected: sc-117752 (**A**) and human TFE3 transfected: sc-178033 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ma, Z., et al. 2008. Binding of upstream stimulatory factor 1 to the E-box regulates the 4G/5G polymorphism-dependent plasminogen activator inhibitor 1 expression in mast cells. J. Allergy Clin. Immunol. 121: 1006-1012.
2. Armah, H.B., et al. 2009. Xp11.2 translocation renal cell carcinoma occurring during pregnancy with a novel translocation involving chromosome 19: a case report with review of the literature. Diagn. Pathol. 4: 15.
3. Chang, I.W., et al. 2009. Melanotic Xp11 translocation renal cancer: a case with PSF-TFE3 gene fusion and up-regulation of melanogenetic transcripts. Am. J. Surg. Pathol. 33: 1894-901.
4. Murakami, A., et al. 2012. Unilateral glomerulocystic kidney disease associated with tuberous sclerosis complex in a neonate. Pathol. Int. 62: 209-215.
5. Yagil, Z., et al. 2012. Transcription factor E3, a major regulator of mast cell-mediated allergic response. J. Allergy Clin. Immunol. 129: 1357-1366.

RESEARCH USE

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