

TFEB (C-6): sc-166736

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.

CHROMOSOMAL LOCATION

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

SOURCE

TFEB (C-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 440-470 within an internal region of TFEB of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain 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-166736 X, 200 µg/0.1 ml.

TFEB (C-6) is available conjugated to agarose (sc-166736 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166736 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166736 PE), fluorescein (sc-166736 FITC), Alexa Fluor® 488 (sc-166736 AF488), Alexa Fluor® 546 (sc-166736 AF546), Alexa Fluor® 594 (sc-166736 AF594) or Alexa Fluor® 647 (sc-166736 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166736 AF680) or Alexa Fluor® 790 (sc-166736 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166736 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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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 (C-6) is recommended for detection of TFEB of 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).

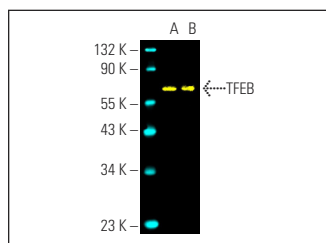
Suitable for use as control antibody for TFEB siRNA (h): sc-38509, TFEB shRNA Plasmid (h): sc-38509-SH and TFEB shRNA (h) Lentiviral Particles: sc-38509-V.

TFEB (C-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

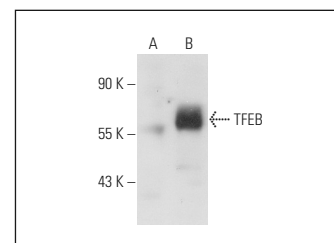
Molecular Weight of TFEB: 65 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Daudi cell lysate: sc-2415 or TFEB (h): 293T Lysate: sc-110109.

DATA



TFEB (C-6) Alexa Fluor® 488: sc-166736 AF488. Direct fluorescent western blot analysis of TFEB expression in Hep G2 (A) and Daudi (B) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 647: sc-516791.



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.

SELECT PRODUCT CITATIONS

- Li, X., et al. 2017. Nucleus-translocated ACSS2 promotes gene transcription for lysosomal biogenesis and autophagy. *Mol. Cell* 66: 684-697.
- Lin, X.X., et al. 2018. DAF-16/FOXO and HLH-30/TFEB function as combinatorial transcription factors to promote stress resistance and longevity. *Nat. Commun.* 9: 4400.
- Pierzynowska, K., et al. 2019. Autophagy-dependent mechanism of genistein-mediated elimination of behavioral and biochemical defects in the rat model of sporadic Alzheimer's disease. *Neuropharmacology* 148: 332-346.
- Liang, R., et al. 2020. Restraining lysosomal activity preserves hematopoietic stem cell quiescence and potency. *Cell Stem Cell* 26: 359-376.
- Singhal, A., et al. 2020. 2-hydroxypropyl-γ-cyclodextrin overcomes NPC1 deficiency by enhancing lysosome-ER association and autophagy. *Sci. Rep.* 10: 8663.

PROTOCOLS

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