TFEB Antibody

**Background:** Transcription factor EB (TFEB) is a member of the Myc-related, bHLH leucine-zipper family of transcription factors that drives the expression of a network of genes known as the Coordinated Lysosomal Expression and Regulation (CLEAR) network (1,2). TFEB specifically recognizes and binds regulatory sequences within the CLEAR box (GTCACGTGAC) of lysosomal and autophagy genes, resulting in the up-regulated expression of genes involved in lysosome biogenesis and function, and regulation of autophagy (1,2). TFEB is activated in response to nutrient deprivation, stimulating translocation to the nucleus where it forms homo- or heterooligomers with other members of the microphthalmia transcription factor (MITF) subfamily and resulting in up-regulation of autophagosomes and lysosomes (3-5). Recently, it has been shown that TFEB is a component of mammalian target of rapamycin (mTOR) complex 1 (mTORC1), which regulates the phosphorylation and nuclear translocation of TFEB in response to cellular starvation and stress (6-9). During normal growth conditions, TFEB is phosphorylated at Ser211 in an mTORC1-dependent manner. Phosphorylation promotes association of TFEB with 14-3-3 family proteins and retention in the cytosol. Inhibition of mTORC1 results in a loss of TFEB phosphorylation, dissociation of the TFEB/14-3-3 complex, and rapid transport of TFEB to the nucleus where it increases transcription of CLEAR and autophagy genes (10). TFEB has also been shown to be activated in a nutrient-dependent manner by p42 MAP kinase (Erk2). TFEB is activated in response to nutrient deprivation (7) via TSC2 and S6K1, independent of mTORC1 (8). TFEB is activated in response to nutrient deprivation, resulting in nuclear localization and activation, and indicating that pathways other than mTOR contribute to nutrient sensing via TFEB (3).

**Specificity/Sensitivity:** TFEB Antibody recognizes endogenous levels of total human TFEB protein.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly412 of human TFEB protein. Antibodies are purified by protein A and peptide affinity chromatography.

**Applications Key:** W—Western

**Applications:**

- Immunoprecipitation

**Species Cross-Reactivity:**

- Human

**Molecular Wt.:** 65-70 kDa

**Source:** Rabbit

**Recommended Antibody Dilutions:**

- Western blotting: 1:1000
- Immunoprecipitation: 1:200

**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at −20°C. Do not aliquot the antibody.

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- Immunoprecipitation: 1:200

**Application specific protocols please see the web page for this product at www.cellsignal.com.**

**Background References:**


**Western blot analysis of extracts from various cell lines using TFEB Antibody (upper) or GAPDH (D16H11) XP® Rabbit mAb #5174 (lower).**

**Immunoprecipitation of TFEB from COLO 205 cells using TFEB Antibody (lane 2) or Normal Rabbit IgG #2729 (lane 3). Lane 1 is 10% input.**

**Western blot analysis of extracts from Raji cells, untreated (-) or Torin1-treated (250 nM, 1 hr; +), using TFEB Antibody.**

**Entrez-Gene ID:** 7942

**Swiss-Prot Acc:** P19484

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