SANTA CRUZ BIOTECHNOLOGY, INC.

TBR-1 (G-5): sc-376258

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A novel murine and human gene, TBR-1, encodes a putative transcription factor related to the Brachyrury (T) gene that is expressed only in postmitotic cells. T-brain-1 (TBR-1) mRNA is largely restricted to the cerebral cortex, where, during embryogenesis, it defines different regions that give rise to the palecortex, limbic cortex and neocortex. TBR-1, Pax-6 and Emx-1 are expressed in the mouse and chicken pallium. The pallio-subpallial boundary lies at the interface between the TBR-1 and Dlx-2 expression domains. Chicken genes homolgous to these mouse genes are expressed in topologically comparable patterns during development, suggesting that mouse and chicken may have similar histogenetic specification processes and field homologies. CASK/LIN-2, a membrane-associated guanylate kinase, is required for EGFR localization and signaling. In adult rat brain, CASK is concentrated at neuronal synapses and binds to the cell-surface proteins. CASK can interact with TBR-1, which is involved in forebrain development. CASK enters into the nucleus and binds to a specific DNA sequence (the T-element) in a complex with TBR-1. Thus, CASK acts as a coactivator of TBR-1 to induce transcription of T-element containing genes, including reelin.

REFERENCES

1. Bulfone, A., et al. 1995. T-brain-1: a homolog of Brachyury whose expression defines molecularly distinct domains within the cerebral cortex. Neuron 15: 63-78.
2. Hsueh, Y.P., et al. 2000. Nuclear translocation and transcription regulation by the membrane-associated guanylate kinase CASK/LIN-2. Nature 404: 298-302.

CHROMOSOMAL LOCATION

Genetic locus: TBR1 (human) mapping to 2q24.2; Tbr1 (mouse) mapping to 2 C1.3.

SOURCE

TBR-1 (G-5) is a mouse monoclonal antibody raised against amino acids 1-200 mapping at the N-terminus of TBR-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-376258 X, 200 µg/0.1 ml.

TBR-1 (G-5) is available conjugated to agarose (sc-376258 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376258 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376258 PE), fluorescein (sc-376258 FITC), Alexa Fluor® 488 (sc-376258 AF488), Alexa Fluor® 546 (sc-376258 AF546), Alexa Fluor® 594 (sc-376258 AF594) or Alexa Fluor® 647 (sc-376258 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376258 AF680) or Alexa Fluor® 790 (sc-376258 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

TBR-1 (G-5) is recommended for detection of TBR-1 of mouse, rat and 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).

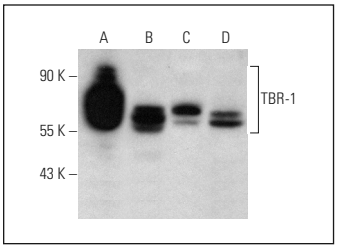
Suitable for use as control antibody for TBR-1 siRNA (h): sc-44141, TBR-1 siRNA (m): sc-60034, TBR-1 shRNA Plasmid (h): sc-44141-SH, TBR-1 shRNA Plasmid (m): sc-60034-SH, TBR-1 shRNA (h) Lentiviral Particles: sc-44141-V and TBR-1 shRNA (m) Lentiviral Particles: sc-60034-V.

TBR-1 (G-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

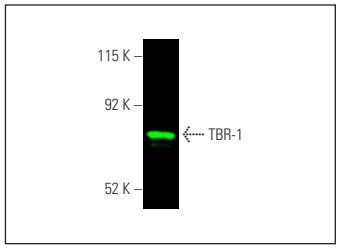
Molecular Weight of TBR-1: 74 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, H4 cell lysate: sc-2408 or RIN-m5F whole cell lysate: sc-364792.

DATA



TBR-1 (G-5): sc-376258. Western blot analysis of TBR-1 expression in human brain tissue extract (**A**) and H4 (**B**), Neuro-2A (**C**) and RIN-m5F (**D**) whole cell lysates.



TBR-1 (G-5) Alexa Fluor® 680: sc-376258 AF680. Direct near-infrared western blot analysis of TBR-1 expression in human brain tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Birger, A., et al. 2018. ALS-related human cortical and motor neurons survival is differentially affected by SEMA3A. Cell Death Dis. 9: 256.
2. Adamo, A.M., et al. 2019. Early developmental marginal zinc deficiency affects neurogenesis decreasing neuronal number and altering neuronal specification in the adult rat brain. Front. Cell. Neurosci. 13: 62.
3. Handara, G., et al. 2019. Alternative splicing and the intracellular domain mediate TM-agrin's ability to differentially regulate the density of excitatory and inhibitory synapse-like specializations in developing CNS neurons. Neuroscience 419: 60-71.
4. Liu, X., et al. 2022. Di-2-ethylhexyl phthalate affects zinc metabolism and neurogenesis in the developing rat brain. Arch. Biochem. Biophys. 727: 109351.

RESEARCH USE

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