SANTA CRUZ BIOTECHNOLOGY, INC.

TMTC3 (G-9): sc-398137

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The tetratricopeptide repeat (TPR) motif is a degenerate, 34 amino acid sequence found in many proteins that acts to mediate protein-protein interactions in various pathways. At the sequence level, there can be up to 16 tandem TPR repeats, each of which has a helix-turn-helix shape that stacks on other TPR repeats to achieve ligand binding specificity. TMTC3 (transmembrane and tetratricopeptide repeat containing 3), also known as SMILE, is a 915 amino acid multi-pass membrane protein belonging to the TMTC family and contains ten TPR repeats. Existing as two alternatively spliced isoforms, TMTC3 is encoded by a gene located on human chromosome 12q21.32. Encoding over 1,100 genes within 132 million bases, chromosome 12 makes up about 4.5% of the human genome.

CHROMOSOMAL LOCATION

Genetic locus: TMTC3 (human) mapping to 12q21.32; Tmtc3 (mouse) mapping to 10 D1.

SOURCE

TMTC3 (G-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 892-915 at the C-terminus of TMTC3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TMTC3 (G-9) is available conjugated to agarose (sc-398137 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398137 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398137 PE), fluorescein (sc-398137 FITC), Alexa Fluor® 488 (sc-398137 AF488), Alexa Fluor® 546 (sc-398137 AF546), Alexa Fluor® 594 (sc-398137 AF594) or Alexa Fluor® 647 (sc-398137 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398137 AF680) or Alexa Fluor® 790 (sc-398137 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398137 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

TMTC3 (G-9) is recommended for detection of TMTC3 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).

TMTC3 (G-9) is also recommended for detection of TMTC3 in additional species, including avian.

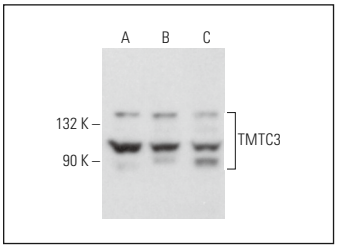
Suitable for use as control antibody for TMTC3 siRNA (h): sc-95711, TMTC3 siRNA (m): sc-154534, TMTC3 shRNA Plasmid (h): sc-95711-SH, TMTC3 shRNA Plasmid (m): sc-154534-SH, TMTC3 shRNA (h) Lentiviral Particles: sc-95711-V and TMTC3 shRNA (m) Lentiviral Particles: sc-154534-V.

Molecular Weight of TMTC3: 104 kDa.

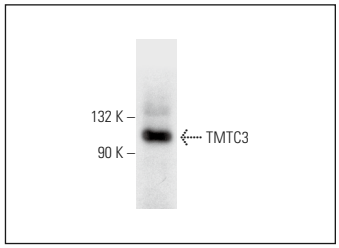
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TMTC3 (G-9): sc-398137. Western blot analysis of TMTC3 expression in NIH/3T3 (**A**), C2C12 (**B**) and Sol8 (**C**) whole cell lysates.



TMTC3 (G-9): sc-398137. Western blot analysis of TMTC3 expression in differentiated ES-D3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Farhan, S.M.K., et al. 2017. Identification of a novel synaptic protein, TMTC3, involved in periventricular nodular heterotopia with intellectual disability and epilepsy. Hum. Mol. Genet. 26: 4278-4289.
2. Yuan, H., et al. 2022. A novel ER stress mediator TMTC3 promotes squamous cell carcinoma progression by activating GRP78/PERK signaling pathway. Int. J. Biol. Sci. 18: 4853-4868.
3. Yuan, H., et al. 2023. Hypoxia-induced TMTC3 expression in esophageal squamous cell carcinoma potentiates tumor angiogenesis through Rho GTPase/STAT3/VEGFA pathway. J. Exp. Clin. Cancer Res. 42: 249.

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.

PROTOCOLS

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