SANTA CRUZ BIOTECHNOLOGY, INC.

TRK-T3 (N-13): sc-47523

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Oncogenic rearrangements of the NTRK1 gene, which encodes the Trk A protein, are frequently detected in thyroid carcinomas. Such rearrangements fuse the NTRK1 tyrosine kinase domain to 5'-end sequences of different genes. TRK-T3 contains 1,412 nucleotides of NTRK1 preceded by 598 nucleotides belonging to TFG (TRK-fused gene), a ubiquitously expressed gene located on chromosome 3. The TRK-T3 protein within the TFG region contains a coiled-coil motif that gives the oncoprotein the capability to form complexes. The cytoplasmic TRK-T3 protein binds to and phosphorylates the Shc and SNT1/FRS2 adaptor proteins, both of which are involved in coupling the receptor tyrosine kinase to the mitogen-activated protein kinase pathway by recruiting Grb2/SOS. SHP-1 also interacts with and down-regulates TRK-T3.

REFERENCES

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2. Roccato, E., Miranda, C., Ranzi, V., Gishizki, M., Pierotti, M.A. and Greco, A. 2002. Biological activity of the thyroid TRK-T3 oncogene requires signalling through Shc. Br. J. Cancer 87: 645-653.
3. Ranzi, V., Meakin, S.O., Miranda, C., Mondellini, P., Pierotti, M.A. and Greco, A. 2003. The signaling adapters fibroblast grow are activated by the thyroid TRK oncoproteins. Endocrinology 144: 922-928.
4. Roccato, E., Pagliardini, S., Cleris, L., Canevari, S., Formelli, F., Pierotti, M.A. and Greco, A. 2003. Role of TFG sequences outside the coiled-coil domain in TRK-T3 oncogenic activation. Oncogene 22: 807-818.
5. Edel, M.J., Shvarts, A., Medema, J.P. and Bernards, R. 2004. An *in vivo* functional genetic screen reveals a role for the TRK-T3 oncogene in tumor progression. Oncogene 23: 4959-4965.
6. Roccato, E., Miranda, C., Raho, G., Pagliardini, S., Pierotti, M.A. and Greco, A. 2005. Analysis of SHP-1-mediated down-regulation of the TRK-T3 oncoprotein identifies TRK-fused gene (TFG) as a novel SHP-1-interacting protein. J. Biol. Chem. 280: 3382-3389.

CHROMOSOMAL LOCATION

Genetic locus: TFG (human) mapping to 3q12.2; Tfg (mouse) mapping to 16 C1.1.

SOURCE

TRK-T3 (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TRK-T3 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-47523 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TRK-T3 (N-13) is recommended for detection of TRK-T3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

TRK-T3 (N-13) is also recommended for detection of TRK-T3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TRK-T3 siRNA (h): sc-61720, TRK-T3 siRNA (m): sc-61721, TRK-T3 shRNA Plasmid (h): sc-61720-SH, TRK-T3 shRNA Plasmid (m): sc-61721-SH, TRK-T3 shRNA (h) Lentiviral Particles: sc-61720-V and TRK-T3 shRNA (m) Lentiviral Particles: sc-61721-V.

Molecular Weight of TRK-T3: 68 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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