

**TTLL1 (N-13): sc-86929**

The Power to Question

**BACKGROUND**

A large protein group known as the tubulin tyrosine ligase-like (TTLL) family is implied to catalyze ligations of amino acids to tubulins and other substrates. Each member contains a characteristic TTL domain. TTLL1 (tubulin tyrosine ligase-like family, member 1), also known as tubulin polyglutamylase complex subunit 3, PGs3 or C22orf7, is a 423 amino acid catalytic subunit of the neuronal tubulin polyglutamylase complex and a member of the tubulin polyglutamylase family. Localized to cytoskeleton and cytosol, TTLL1 is widely expressed with highest levels found in brain, testis and heart. TTLL1 generates glutamate side chains on C-terminal regions of  $\alpha$ - and  $\beta$ -Tubulin and contains one TTL domain. Four TTLL1 isoforms are known to exist as a result of alternative splicing events. The gene encoding TTLL1 maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome. Mutations in several of the genes that map to chromosome 22 are involved in the development of Phelan-McDermid syndrome, neurofibromatosis type 2, autism and schizophrenia.

**REFERENCES**

1. Trichet, V., et al. 2000. Characterization of the human tubulin tyrosine ligase-like 1 gene (TTLL1) mapping to 22q13.1. *Gene* 257: 109-117.
2. Briegel, W. and Cohen, M. 2004. Chromosome 22q11 deletion syndrome and its relevance for child and adolescent psychiatry. An overview of etiology, physical symptoms, aspects of child development and psychiatric disorders. *Z. Kinder Jugendpsychiatr. Psychother.* 32: 107-115.
3. Janke, C., et al. 2005. Tubulin polyglutamylase enzymes are members of the TTL domain protein family. *Science* 308: 1758-1762.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 608955. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Gothelf, D., et al. 2008. Genes, brain development and psychiatric phenotypes in velo-cardio-facial syndrome. *Dev. Disabil. Res. Rev.* 14: 59-68.
6. Sathyamoorthi, S., et al. 2009. Array analysis and molecular studies of INI1 in an infant with deletion 22q13 (Phelan-McDermid syndrome) and atypical teratoid/rhabdoid tumor. *Am. J. Med. Genet. A* 149A: 1067-1069.

**CHROMOSOMAL LOCATION**

Genetic locus: TTLL1 (human) mapping to 22q13.2; Ttl1 (mouse) mapping to 15 E1.

**SOURCE**

TTLL1 (N-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of TTLL1 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.

**RESEARCH USE**

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

**PRODUCT**

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86929 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

**APPLICATIONS**

TTLL1 (N-13) is recommended for detection of TTLL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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); non cross-reactive with isoform 3.

TTLL1 (N-13) is also recommended for detection of TTLL1 in additional species, including equine, canine and porcine.

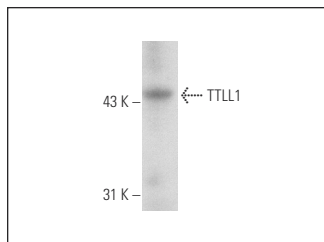
Suitable for use as control antibody for TTLL1 siRNA (h): sc-76772, TTLL1 siRNA (m): sc-154786, TTLL1 shRNA Plasmid (h): sc-76772-SH, TTLL1 shRNA Plasmid (m): sc-154786-SH, TTLL1 shRNA (h) Lentiviral Particles: sc-76772-V and TTLL1 shRNA (m) Lentiviral Particles: sc-154786-V.

Molecular Weight of TTLL1: 49 kDa.

Positive Controls: mouse heart extract: sc-2254.

**RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

**DATA**

TTLL1 (N-13): sc-86929. Western blot analysis of TTLL1 expression in mouse heart tissue extract.

**PROTOCOLS**

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.