SANTA CRUZ BIOTECHNOLOGY, INC.

# TTYH1 (I-15): sc-244543

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*The Power to Question*

## BACKGROUND

The tweety family of proteins are membrane bound receptors that function as chloride anion channels and may be involved in transport of iron or other divalent cations. TTYH1 (tweety homolog 1, *Drosophila melanogaster),* is a 450 amino acid multi-pass membrane protein that belongs to the tweety family and is expressed in brain, eye, ovary and testis, with lower expression in muscle, placenta, liver and lung. Composed of five predicted transmembrane segments and a C-terminus that is enriched in negatively charged residues capable of $Ca^{2+}$ binding, TTYH1 may play a role during mitosis in early embryogenesis, possibly by maintaining $Ca^{2+}$ homeostasis in the endoplasmic reticulum. TTYH1 exists as five alternatively spliced isoforms, where isoform 3 is considered a possible $Ca^{2+}$-independent and swelling-activated chloride channel, which may be involved in regulation of cell volume. TTYH1 is regulated by NEDD4-L and is encoded by a gene located on human chromosome 19q13.42.

## REFERENCES


1. Maleszka, R., et al. 1996. The *Drosophila melanogaster* dodo (dod) gene, conserved in humans, is functionally interchangeable with the ESS1 cell division gene of *Saccharomyces cerevisiae*. Proc. Natl. Acad. Sci. USA 93: 447-451.
2. Campbell, H.D., et al. 2000. Human and mouse homologues of the *Drosophila melanogaster* tweety (tty) gene: a novel gene family encoding predicted transmembrane proteins. Genomics 68: 89-92.
3. Rae, F.K., et al. 2001. TTYH2, a human homologue of the *Drosophila melanogaster* gene tweety, is located on 17q24 and upregulated in renal cell carcinoma. Genomics 77: 200-207.
4. Suzuki, M. and Mizuno, A. 2004. A novel human $Cl^-$ channel family related to *Drosophila* flightless locus. J. Biol. Chem. 279: 22461-22468.
5. He, Y., et al. 2008. The ubiquitin-protein ligase Nedd4-2 differentially interacts with and regulates members of the Tweety family of chloride ion channels. J. Biol. Chem. 283: 24000-24010.
6. Kumada, T., et al. 2010. Ttyh1, a $Ca^{2+}$-binding protein localized to the endoplasmic reticulum, is required for early embryonic development. Dev. Dyn. 239: 2233-2245.
7. Stefaniuk, M., et al. 2010. Expression of Ttyh1, a member of the Tweety family in neurons *in vitro* and *in vivo* and its potential role in brain pathology. J. Neurochem. 115: 1183-1194.


## CHROMOSOMAL LOCATION

Genetic locus: TTYH1 (human) mapping to 19q13.42; Ttyh1 (mouse) mapping to 7 A1.

## SOURCE

TTYH1 (I-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TTYH1 of human origin.

## RESEARCH USE

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

## 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-244543 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TTYH1 (I-15) is recommended for detection of TTYH1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 TTYH1 siRNA (h): sc-97439, TTYH1 siRNA (m): sc-154800, TTYH1 shRNA Plasmid (h): sc-97439-SH, TTYH1 shRNA Plasmid (m): sc-154800-SH, TTYH1 shRNA (h) Lentiviral Particles: sc-97439-V and TTYH1 shRNA (m) Lentiviral Particles: sc-154800-V.

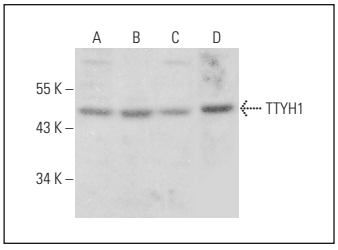
Molecular Weight of TTYH1: 45 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Raji whole cell lysate: sc-364236 or NCI-H460 whole cell lysate: sc-364235.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA




TTYH1 (I-15): sc-244543. Western blot analysis of TTYH1 expression in HeLa (**A**), Raji (**B**), NCI-H460 (**C**) and U-87 MG (**D**) whole cell lysates.

## STORAGE

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