

Tomosyn (15): sc-136105

BACKGROUND

WD-repeats are motifs that are found in a variety of proteins and are characterized by a conserved core of 40-60 amino acids that commonly form a tertiary propeller structure. While proteins that contain WD-repeats participate in a wide range of cellular functions, they are generally involved in regulatory mechanisms concerning chromatin assembly, cell cycle control, signal transduction, RNA processing, apoptosis and vesicular trafficking. Tomosyn, also known as STXBP5 (syntaxin binding protein 5), LLGL3 or LGL3, is a 1,151 amino acid protein that localizes to the cytoplasm, as well as to the cell junction, secretory vesicles and to the peripheral membrane and contains one v-SNARE coiled-coil homology domain and 14 WD repeats. Interacting with Syntaxin 1 and Syntaxin 1B, Tomosyn functions as a regulator of neurotransmitter release and calcium-dependent exocytosis. Additionally, Tomosyn inhibits membrane fusion and may play a role in the assembly of SNARE complexes between transport vesicles and the plasma membrane. Multiple isoforms of Tomosyn exist due to alternative splicing events.

REFERENCES

1. van der Voorn, L., et al. 1992. The WD-40 repeat. FEBS Lett. 307: 131-134.
2. Fujita, Y., et al. 1998. Tomosyn: a syntaxin-1-binding protein that forms a novel complex in the neurotransmitter release process. Neuron 20: 905-915.
3. Yokoyama, S., et al. 1999. Three splicing variants of tomosyn and identification of their syntaxin-binding region. Biochem. Biophys. Res. Commun. 256: 218-222.
4. Smith, T.F., et al. 1999. The WD repeat: a common architecture for diverse functions. Trends Biochem. Sci. 24: 181-185.
5. Widberg, C.H., et al. 2003. Tomosyn interacts with the t-SNAREs syntaxin4 and SNAP23 and plays a role in Insulin-stimulated GLUT4 translocation. J. Biol. Chem. 278: 35093-35101.

CHROMOSOMAL LOCATION

Genetic locus: STXBP5 (human) mapping to 6q24.3; Stxbp5 (mouse) mapping to 10 A1.

SOURCE

Tomosyn (15) is a mouse monoclonal antibody raised against amino acids 910-1105 of Tomosyn of rat origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Tomosyn (15) is available conjugated to agarose (sc-136105 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-136105 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

STORAGE

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

APPLICATIONS

Tomosyn (15) is recommended for detection of Tomosyn 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Tomosyn siRNA (h): sc-76713, Tomosyn siRNA (m): sc-76714, Tomosyn shRNA Plasmid (h): sc-76713-SH, Tomosyn shRNA Plasmid (m): sc-76714-SH, Tomosyn shRNA (h) Lentiviral Particles: sc-76713-V and Tomosyn shRNA (m) Lentiviral Particles: sc-76714-V.

Molecular Weight of Tomosyn: 130 kDa.

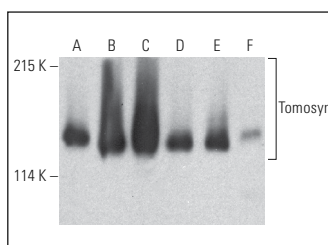
Positive Controls: A2058 whole cell lysate: sc-364178, K-562 whole cell lysate: sc-2203 or MEG-01 cell lysate: sc-2283.

RECOMMENDED SUPPORT REAGENTS

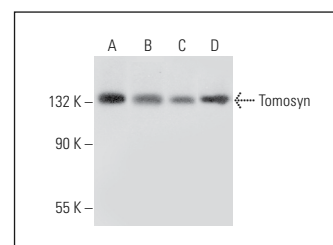
To ensure optimal results, the following support reagents are recommended:

- 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



Tomosyn (15): sc-136105. Western blot analysis of Tomosyn expression in A2058 (A), K-562 (B), MEG-01 (C), EOC 20 (D), Neuro-2A (E) and C6 (F) whole cell lysates.



Tomosyn (15): sc-136105. Western blot analysis of Tomosyn expression in EOC 20 (A), Neuro-2A (B), SK-N-MC (C) and A2058 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Takeuchi, S., et al. 2016. Tomosyn negatively regulates arginine vasopressin secretion in embryonic stem cell-derived neurons. PLoS ONE 11: e0164544.
2. Zurawski, Z., et al. 2019. Disabling the G_{βγ}-SNARE interaction disrupts GPCR-mediated presynaptic inhibition, leading to physiological and behavioral phenotypes. Sci. Signal. 12: eaat8595.

RESEARCH USE

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