

TACSTD2/TROP2 (D1W5W) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H	Endogenous	45-65	Rabbit IgG	#P09758	4070

Product Usage Information**Application**

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

TACSTD2/TROP2 (D1W5W) Rabbit mAb recognizes endogenous levels of total TACSTD2/TROP2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val90 of human TACSTD2/TROP2 protein.

Background

TROP2 is a transmembrane glycoprotein encoded by gene *TACSTD2* (tumor-associated calcium signal transducer 2). TROP2 was first discovered as a biomarker of invasive trophoblast cells and later reported in many types of cancer cells, in various organs during development, and adult stem cells during homeostasis (1,2). TROP2 has an extracellular domain with EGF thyroglobulin type-1 repeats, a transmembrane domain, and a short cytoplasmic tail with a HIKE domain containing a PIP2 binding site and PKC phosphorylation site (Ser303) (1-4). TROP2 functions by regulating multiple signaling pathways, including the interaction of its extracellular domain with integrin beta1 to regulate FAK signaling, the association of its transmembrane domain with claudin-1 and claudin-7 for tight junction formation, and the regulation of intracellular calcium release by its PIP2 binding and activation of the ERK/MAPK pathway (1,2,5-8). All these functions are important for its role in tumor proliferation, metastasis, and invasion (1,2). PKC can phosphorylate TROP2 at Ser303; the phosphorylation changes the cytoplasmic tail conformation and further promotes its signaling (9). TROP2 can be activated through intramembrane proteolysis first by TACE, followed by further cleavage by Presenilin 1 and Presenilin 2. The proteolysis process is required for its role in tumor cell proliferation (10,11).

Background References

1. McDougall, A.R. et al. (2015) *Dev Dyn* 244, 99-109.
2. Shvartsur, A. and Bonavida, B. (2015) *Genes Cancer* 6, 84-105.
3. El Sewedy, T. et al. (1998) *Int J Cancer* 75, 324-30.
4. Linnenbach, A.J. et al. (1993) *Mol Cell Biol* 13, 1507-15.
5. Trerotola, M. et al. (2013) *Cancer Res* 73, 3155-67.
6. Trerotola, M. et al. (2015) *Oncotarget* 6, 14318-28.
7. Nakatsukasa, M. et al. (2010) *Am J Pathol* 177, 1344-55.
8. Cubas, R. et al. (2010) *Mol Cancer* 9, 253.
9. Pavšič, M. et al. (2015) *Sci Rep* 5, 10324.
10. Stoyanova, T. et al. (2012) *Genes Dev* 26, 2271-85.
11. Ju, X. et al. (2016) *Cancer Res* 76, 6723-34.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

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