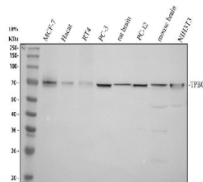


TPBG Antibody / Trophoblast glycoprotein (FY12461)

Catalog No.	Formulation	Size
FY12461	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

[Bulk quote request](#)

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	Q13641
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This TPBG antibody is available for research use only.



Western blot analysis of TPBG using anti-TPBG antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human MCF-7 whole cell lysates, Lane 2: human Hacat whole cell lysates, Lane 3: human RT4 whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat PC-12 whole cell lysates, Lane 7: mouse brain tissue lysates, Lane 8: mouse NIH/3T3 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-TPBG antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. TPBG (~45 kDa predicted) was detected primarily at ~70-80 kDa, consistent with extensive N-linked glycosylation of the extracellular domain. A faint higher band (~90-100 kDa) likely represents a hyperglycosylated variant of TPBG, as previously reported for the trophoblast glycoprotein 5T4.

Description

TPBG antibody detects Trophoblast glycoprotein, a highly glycosylated cell surface protein involved in cell adhesion, signal transduction, and immune regulation. Also known as 5T4 oncofetal antigen, TPBG is a type I transmembrane glycoprotein expressed in trophoblasts and upregulated in many carcinomas. The TPBG antibody is used extensively in cancer biology, immunology, and stem cell research to study tumor invasion, metastasis, and cell differentiation mechanisms regulated by this protein.

TPBG is encoded by the TPBG gene located on human chromosome 6q14.1. The mature protein is approximately 420 amino acids long and features an N-terminal signal peptide, several leucine-rich repeats, and an immunoglobulin-like domain in its extracellular region. It is anchored to the plasma membrane through a single transmembrane helix and contains a short cytoplasmic tail. Physiologically, TPBG modulates cell-cell interactions in placental development and embryo implantation, while pathologically, it is re-expressed in many epithelial tumors, where it contributes to epithelial-mesenchymal transition (EMT) and metastatic behavior.

The TPBG antibody is commonly used in immunohistochemistry and flow cytometry to identify tumor cells expressing the 5T4 antigen. Elevated TPBG expression has been reported in lung, ovarian, colorectal, and pancreatic cancers and is associated with poor prognosis and increased invasiveness. The protein influences Wnt/beta-catenin and CXCR4 signaling pathways, promoting migration and stem-like phenotypes. Western blot typically shows a broad band between 72-80 kDa, reflecting heavy glycosylation. Immunofluorescence microscopy reveals localization along the plasma membrane and at cell junctions.

In stem cell research, TPBG expression marks the transition from pluripotency to differentiation, making it a useful biomarker in embryonic stem cell studies. It modulates cytoskeletal dynamics and cell polarity through interactions with intracellular adaptors. Therapeutically, TPBG serves as a target for cancer immunotherapies, including antibody-drug conjugates and vaccines under clinical evaluation. NSJ Bioreagents provides a validated TPBG antibody optimized for western blot, flow cytometry, and immunohistochemistry, enabling reliable detection of this tumor-associated glycoprotein and supporting ongoing efforts in oncology and regenerative medicine research.

Application Notes

Optimal dilution of the TPBG antibody should be determined by the researcher.

Immunogen

E.coli-derived human TPBG recombinant protein (Position: E70-V420) was used as the immunogen for the TPBG antibody.

Storage

After reconstitution, the TPBG antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.