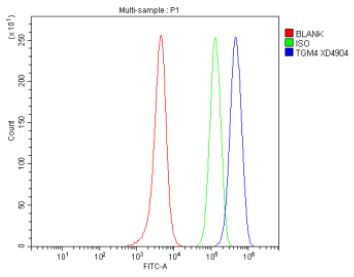
TGM4 Antibody / Transglutaminase 4 (FY13193)

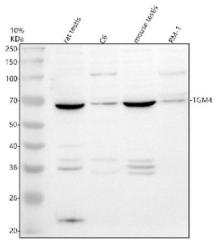
Catalog No.	Formulation	Size
FY13193	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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 Na2HPO4.
UniProt	P49221
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This TGM4 antibody is available for research use only.



Flow Cytometry analysis of SH-SY5Y cells using anti-TGM4 antibody. Overlay histogram showing SH-SY5Y cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-TGM4 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of TGM4 using anti-TGM4 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat testis tissue lysates, Lane 2: rat C6 whole cell lysates, Lane 3: mouse testis tissue lysates, Lane 4: mouse RM-1 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-TGM4 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. A specific band was detected for TGM4 at approximately 68 kDa. The expected molecular weight of TGM4 is ~77 kDa.

Description

TGM4 antibody detects Transglutaminase 4, an enzyme that catalyzes the cross-linking of proteins through ?-(gamma-glutamyl) lysine bonds, contributing to the stabilization of extracellular structures. The UniProt recommended name is Transglutaminase 4 (TGM4). This enzyme is part of the transglutaminase family, which mediates post-translational protein modification and plays critical roles in cell adhesion, differentiation, and reproductive physiology.

Functionally, TGM4 antibody identifies a 684-amino-acid secreted and membrane-associated protein primarily expressed in the prostate and other reproductive tissues. TGM4 cross-links seminal plasma proteins, forming insoluble networks that contribute to semen coagulation and fertility. It may also participate in epithelial barrier formation and immune defense in the urogenital tract.

The TGM4 gene is located on chromosome 3p21.33 and is expressed in male reproductive tissues and epithelial surfaces. TGM4 activity is regulated by calcium ions and thiol-reactive compounds, influencing enzyme conformation and catalytic activity.

Pathologically, altered TGM4 expression has been associated with prostate cancer and infertility. Decreased expression correlates with impaired seminal coagulation, while increased levels are observed in prostate tumors and serve as potential diagnostic biomarkers. Research using TGM4 antibody supports studies in enzymology, reproductive biology, and oncology.

TGM4 antibody is validated for western blotting, immunohistochemistry, and ELISA to detect transglutaminase enzymes. NSJ Bioreagents provides TGM4 antibody reagents optimized for reproductive biology, enzymatic modification, and cancer biomarker studies.

Structurally, Transglutaminase 4 consists of a catalytic core domain containing the active site cysteine, histidine, and aspartate residues, flanked by beta-sandwich and C-terminal domains that mediate substrate binding. This antibody enables analysis of TGM4’s role in cross-linking reactions and reproductive function.

Application Notes

Optimal dilution of the TGM4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TGM4 recombinant protein (Position: M1-K684) was used as the immunogen for the TGM4 antibody.

Storage

After reconstitution, the TGM4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.