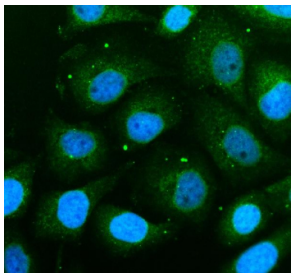
THEM6 Antibody / Thioesterase superfamily member 6 (FY13027)

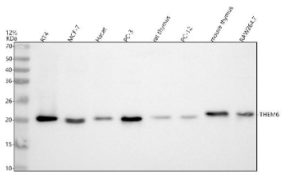
Catalog No.	Formulation	Size
FY13027	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

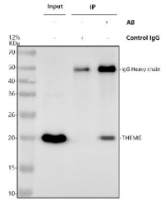
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q8WUY1
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Immunoprecipitation : 2-4ug/500ug of lysate Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This THEM6 antibody is available for research use only.



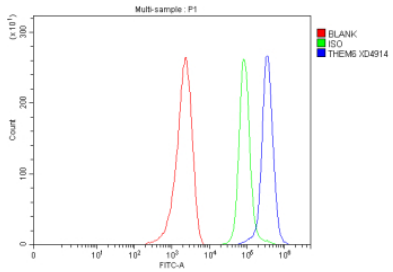
Immunofluorescent staining of THEM6 using anti-THEM6 antibody (green). THEM6 was detected in an immunocytochemical section of SIHA cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-THEM6 antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of THEM6 using anti-THEM6 antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human RT4 whole cell lysates, Lane 2: human MCF-7 whole cell lysates, Lane 3: human Hacat whole cell lysates, Lane 4: human PC-3 whole cell lysates, Lane 5: rat thymus tissue lysates, Lane 6: rat PC-12 whole cell lysates, Lane 7: mouse thymus tissue lysates, Lane 8: mouse RAW264.7 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-THEM6 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 distinct band is detected at approximately 20 kDa, slightly below the predicted molecular weight of 24 kDa for full-length THEM6. The faster migration is consistent with literature reports indicating that THEM6 undergoes N-terminal signal-peptide cleavage and contains hydrophobic ER-targeting sequences that reduce SDS binding, producing an apparent size around 19-21 kDa on SDS-PAGE.



Immunoprecipitating THEM6 in PC-3 whole cell lysate. Western blot analysis of THEM6 using anti-THEM6 antibody. Lane 1: PC-3 whole cell lysates (30ug), Lane 2: Rabbit control IgG instead of anti-THEM6 antibody in PC-3 whole cell lysate, Lane 3: anti-THEM6 antibody (2ug) + PC-3 whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-THEM6 antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A distinct band is detected at approximately 20 kDa, slightly below the predicted molecular weight of 24 kDa for full-length THEM6. The faster migration is consistent with literature reports indicating that THEM6 undergoes N-terminal signal-peptide cleavage and contains hydrophobic ER-targeting sequences that reduce SDS binding, producing an apparent size around 19-21 kDa on SDS-PAGE.



Flow Cytometry analysis of MCF-7 cells using anti-THEM6 antibody. Overlay histogram showing MCF-7 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-THEM6 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.

Description

THEM6 antibody detects Acyl-CoA thioesterase THEM6, a lipid-metabolizing enzyme that hydrolyzes fatty acyl-CoA esters to free fatty acids and CoA, regulating lipid signaling and energy homeostasis. The UniProt recommended name is Acyl-CoA thioesterase THEM6 (THEM6). This enzyme belongs to the thioesterase superfamily, which plays essential roles in lipid metabolism, peroxisomal function, and cellular stress response.

Functionally, THEM6 antibody identifies a 247-amino-acid protein localized primarily in the endoplasmic reticulum (ER). THEM6 catalyzes the hydrolysis of long-chain acyl-CoA molecules, controlling intracellular levels of activated fatty acids and maintaining the balance between lipid synthesis and degradation. By regulating acyl-CoA and free fatty acid pools, THEM6 influences energy metabolism, membrane composition, and lipid signaling cascades.

The THEM6 gene is located on chromosome 1p36.33 and encodes an enzyme expressed in metabolically active tissues, including liver, adipose tissue, and skeletal muscle. THEM6 contains a hotdog-fold thioesterase domain characteristic of

enzymes that process acyl-CoA intermediates. Its activity is critical for preventing the accumulation of toxic acyl-CoA derivatives that can impair mitochondrial function and oxidative metabolism. THEM6 also participates in lipid remodeling pathways that maintain ER membrane homeostasis.

In cellular metabolism, THEM6 acts as a regulator of lipid droplet dynamics and fatty acid oxidation. It modulates the availability of CoA for beta-oxidation and phospholipid biosynthesis, indirectly influencing mitochondrial energy production. Dysregulation of THEM6 expression has been linked to metabolic disorders, including fatty liver disease and obesity. Emerging evidence suggests a role for THEM6 in cancer cell metabolism, where enhanced lipid turnover supports rapid proliferation and membrane biogenesis.

THEM6 antibody is widely used in lipid metabolism, enzymology, and metabolic disease research. It is suitable for western blotting, immunofluorescence, and subcellular localization studies to detect THEM6 expression in cellular and tissue samples. This antibody supports studies of acyl-CoA metabolism, lipid homeostasis, and ER stress responses. In metabolic and cancer research, THEM6 detection provides insights into how cells reprogram lipid utilization under stress or nutrient limitation.

Structurally, THEM6 contains a conserved thioesterase catalytic triad composed of serine, histidine, and aspartate residues, mediating acyl-CoA hydrolysis. Its ER localization is maintained through a C-terminal retention signal, and its expression may be regulated by nutrient and hormonal cues. NSJ Bioreagents provides THEM6 antibody reagents validated for use in lipid signaling, metabolic regulation, and enzymatic function research.

Application Notes

Optimal dilution of the THEM6 antibody should be determined by the researcher.

Immunogen

E.coli-derived human THEM6 recombinant protein (Position: Y23-Q208) was used as the immunogen for the THEM6 antibody.

Storage

After reconstitution, the THEM6 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.