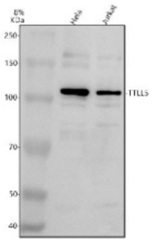
TTLL5 Antibody / Tubulin tyrosine ligase-like protein 5 (FY12732)

Catalog No.	Formulation	Size
FY12732	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
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	Q6EMB2
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This TTLL5 antibody is available for research use only.



Western blot analysis of TTLL5 using anti-TTLL5 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human Jurkat 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-TTLL5 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 predominant band is observed just above the 100 kDa marker, consistent with reported TTLL5 isoforms and known electrophoretic migration behavior of this protein (predicted ~144 kDa).

Description

TTLL5 antibody detects Tubulin polyglutamylase TTLL5 (Tubulin tyrosine ligase-like protein 5), an enzyme that catalyzes post-translational glutamylation of alpha- and beta-tubulin, thereby regulating microtubule stability, motility, and interactions with associated proteins. Encoded by the TTLL5 gene on chromosome 14q24.3, this enzyme belongs to the

TTLL family of tubulin-modifying enzymes responsible for adding glutamate side chains to tubulin and other cytoskeletal proteins. TTLL5 contains a tubulin-tyrosine ligase domain and a coiled-coil region that mediate enzymatic activity and substrate recognition. Through microtubule glutamylation, TTLL5 plays crucial roles in ciliary function, intracellular trafficking, and sensory perception.

TTLL5 is expressed in multiple tissues, including retina, testis, and brain, where it supports specialized microtubule structures such as photoreceptor connecting cilia and sperm flagella. In photoreceptor cells, TTLL5 regulates the glutamylation of ciliary axonemes and outer segment proteins critical for vision. Mutations in TTLL5 cause inherited retinal dystrophies, including cone-rod dystrophy and Leber congenital amaurosis, due to defective ciliary transport and photoreceptor degeneration. In spermatozoa, TTLL5 is essential for flagellar stability and motility, and its absence leads to asthenozoospermia and male infertility.

The TTLL5 antibody is widely used in cell biology, neurobiology, and reproductive research to study microtubule post-translational modification and ciliary biology. Western blot analysis identifies a 130 kilodalton band corresponding to the full-length enzyme, while immunofluorescence reveals localization along ciliary and cytoplasmic microtubules. Researchers employ this antibody to investigate TTLL5-dependent pathways controlling axonemal function and intracellular transport. Dysregulation of tubulin glutamylation has been implicated in neurodegenerative diseases and ciliopathies, making TTLL5 an important molecular marker for cytoskeletal regulation.

Functionally, TTLL5 acts with other TTLL family members to maintain the dynamic balance between glutamylation and deglutamylation, which modulates motor protein activity and vesicular transport. The TTLL5 antibody facilitates the study of these processes and enables precise mapping of TTLL5 expression across tissues. NSJ Bioreagents supplies this antibody validated for its applications, ensuring reliable detection of TTLL5 in studies of ciliary structure, microtubule regulation, and human disease mechanisms.

Application Notes

Optimal dilution of the TTLL5 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TTLL5 recombinant protein (Position: R111-E1015) was used as the immunogen for the TTLL5 antibody.

Storage

After reconstitution, the TTLL5 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.