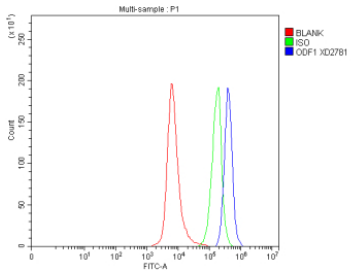
ODF1 Antibody / Outer dense fiber protein 1 (FY12314)

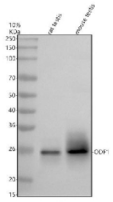
Catalog No.	Formulation	Size
FY12314	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q14990
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This ODF1 antibody is available for research use only.



Flow Cytometry analysis of SH-SY5Y cells using anti-ODF1 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-ODF1 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 ODF1 using anti-ODF1 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: mouse testis tissue 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-ODF1 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. The expected molecular weight of ODF1 is ~28 kDa.

Description

ODF1 antibody detects Outer dense fiber protein 1, encoded by the ODF1 gene on chromosome 8q22.2. ODF1 antibody is widely applied in reproductive biology, spermatogenesis, and fertility research. ODF1 is a structural protein of the sperm tail, specifically localized to the outer dense fibers that run alongside the axoneme in the principal piece of the flagellum. These fibers provide mechanical strength, protect the axoneme from shear stress, and contribute to the elastic recoil properties of sperm movement.

Structurally, ODF1 is a ~27 kDa coiled-coil protein with leucine zipper motifs that promote oligomerization. It is one of the earliest proteins incorporated into outer dense fibers during spermatid differentiation. ODF1 interacts with other outer dense fiber proteins such as ODF2 and with axonemal microtubules, forming the cytoskeletal backbone of the sperm tail.

Functionally, ODF1 contributes to sperm motility by reinforcing the axoneme and supporting energy transmission along the flagellum. Loss of ODF1 leads to structural abnormalities in the sperm tail and impaired motility, resulting in infertility. Researchers use ODF1 antibody to study spermatogenesis, sperm structure, and male fertility.

Clinically, ODF1 mutations or dysregulation have been associated with asthenozoospermia and male infertility. Studies in mice show that ODF1 knockout results in male sterility due to defective sperm tails. Because sperm tail defects are a common cause of infertility, ODF1 is a biomarker of reproductive health. NSJ Bioreagents provides ODF1 antibody for fertility and reproductive biology research.

Experimentally, ODF1 antibody is used in western blotting to detect the ~27 kDa protein, in immunofluorescence to visualize sperm tail localization, and in immunohistochemistry of testicular sections. Co-immunoprecipitation with ODF1 antibody reveals interactions with cytoskeletal partners critical for flagellar integrity.

Application Notes

Optimal dilution of the ODF1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the N-terminus of human ODF1 was used as the immunogen for the ODF1 antibody.

Storage

After reconstitution, the ODF1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Copyright © NSJ Bioreagents. All rights reserved.