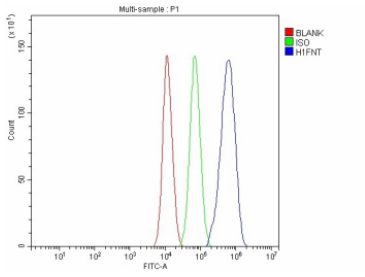
H1-7 Antibody / Histone H1.7 (FY12731)

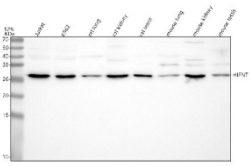
Catalog No.	Formulation	Size
FY12731	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q75WM6
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This H1-7 antibody is available for research use only.



Flow Cytometry analysis of JK cells using anti-H1-7 antibody. Overlay histogram showing JK 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-H1-7 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 H1-7 using anti-H1-7 antibody. Lane 1: human Jurkat whole cell lysates, Lane 2: human K562 whole cell lysates, Lane 3: rat lung tissue lysates, Lane 4: rat kidney tissue lysates, Lane 5: rat testis tissue lysates, Lane 6: mouse lung tissue lysates, Lane 7: mouse kidney tissue lysates, Lane 8: 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-H1-7 antibody at 0.25 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 enhanced chemiluminescent. A specific band was detected for H1-7 at approximately 28 kDa. The expected molecular weight of H1-7 is ~28 kDa.

Description

H1-7 antibody detects Histone H1.7 (also known as H1t or Testis-specific H1 histone), a linker histone variant involved in chromatin compaction and transcriptional regulation during spermatogenesis. Encoded by the H1-7 gene on chromosome 6p22.2, this protein belongs to the histone H1 family that binds to nucleosomal DNA between core particles, stabilizing higher-order chromatin structure. H1.7 exhibits distinct biochemical properties compared with somatic H1 variants, including reduced DNA-binding affinity and enhanced chromatin mobility, which facilitate the chromatin remodeling required for germ cell development.

H1.7 is expressed almost exclusively in testicular germ cells, particularly in pachytene spermatocytes and round spermatids, where chromatin undergoes extensive reorganization. It replaces somatic H1 variants during meiotic and post-meiotic stages, allowing transcriptional flexibility essential for spermatogenic gene expression. H1.7 contributes to chromatin condensation preceding the histone-to-protamine transition that culminates in sperm chromatin packaging. The developmental restriction and unique structural properties of H1.7 make it an important model for studying chromatin dynamics and gene regulation in reproductive cells.

The H1-7 antibody is extensively used in chromatin biology and reproductive research to detect this testis-specific linker histone. Western blot analysis typically identifies a 22 kilodalton band corresponding to H1.7, while immunohistochemistry reveals nuclear localization in spermatocytes and spermatids. Expression of H1.7 is temporally regulated during spermatogenesis, peaking in mid- to late-meiotic cells. The antibody aids in distinguishing stages of germ cell development and in analyzing chromatin remodeling events that occur during sperm maturation.

Beyond reproduction, studies of H1.7 provide insights into histone variant specialization and epigenetic regulation. Its distinct sequence and phosphorylation sites confer specialized interactions with chromatin remodeling complexes and transcriptional regulators. Comparative analyses using the H1-7 antibody reveal how testis-specific histones maintain genomic integrity while supporting dynamic transcription in germ cells. NSJ Bioreagents supplies this antibody validated for its applications, ensuring precise detection of Histone H1.7 in reproductive and epigenetic research contexts.

Application Notes

Optimal dilution of the H1-7 antibody should be determined by the researcher.

Immunogen

E.coli-derived human H1-7 recombinant protein (Position: H35-R130) was used as the immunogen for the H1-7 antibody.

Storage

After reconstitution, the H1-7 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.