

Histone H3 Antibody / HIST1H3A/B/C/D/E/F/G/H/I/J (FY13038)

Catalog No.	Formulation	Size
FY13038	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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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 4mg Trehalose, 0.9mg NaCl, 0.2mg Na ₂ HPO ₄ .
UniProt	P68431
Applications	ELISA : 0.1-0.5ug/ml Flow Cytometry : 1-3ug/million cells Immunofluorescence : 5ug/ml Immunohistochemistry : 2-5ug/ml Immunocytochemistry : 5ug/ml Western Blot : 0.25-0.5ug/ml
Limitations	This Histone H3 antibody is available for research use only.

Description

Histone H3 antibody detects core histone protein H3, one of the fundamental structural components of chromatin that forms nucleosomes in eukaryotic cells. The UniProt recommended name is Histone H3, encoded by multiple human genes including HIST1H3A through HIST1H3J. Histone H3 plays a central role in DNA packaging, gene regulation, and epigenetic control through post-translational modifications that influence chromatin structure and transcriptional activity.

Functionally, Histone H3 antibody identifies a 136-amino-acid nuclear protein that forms an octameric core complex with histones H2A, H2B, and H4. This complex organizes 147 base pairs of DNA into nucleosomes, the fundamental repeating unit of chromatin. Modifications of histone H3, including methylation, acetylation, phosphorylation, and ubiquitination, act as epigenetic marks that determine chromatin accessibility and gene expression status. The N-terminal tail of H3 serves as the primary site for these covalent modifications.

The HIST1H3 family of genes is clustered on chromosome 6p22.2, encoding nearly identical variants of histone H3

proteins that differ slightly in sequence and expression timing. Histone H3 variants, including H3.1, H3.2, and H3.3, exhibit distinct deposition patterns; replication-dependent variants incorporate during DNA synthesis, while H3.3 is incorporated independently of replication to maintain transcriptionally active chromatin. These variants play unique roles in genome stability, DNA repair, and transcriptional memory.

Epigenetically, histone H3 modifications define specific chromatin states: trimethylation at lysine 4 (H3K4me3) marks active promoters, while methylation at lysine 9 (H3K9me3) and lysine 27 (H3K27me3) signify repressed or heterochromatic regions. Phosphorylation of serine 10 (H3S10ph) correlates with mitotic chromatin condensation. Dysregulation of these modifications leads to altered gene expression and contributes to developmental disorders, cancer, and epigenetic diseases.

Histone H3 antibody is widely used in epigenetics, chromatin biology, and transcriptional regulation research. It is suitable for western blotting, chromatin immunoprecipitation, immunofluorescence, and immunohistochemistry to detect histone H3 and its modified forms. This antibody supports studies of chromatin structure, gene expression, and nucleosome dynamics. It also serves as a normalization control in nuclear extract analyses due to its consistent expression across cell types.

Structurally, histone H3 adopts a histone fold domain that facilitates DNA wrapping and histone-histone interactions within the nucleosome. Its flexible N-terminal tail extends from the nucleosome surface and interacts with chromatin modifiers and transcriptional machinery. NSJ Bioreagents provides Histone H3 antibody reagents validated for use in chromatin remodeling, epigenetic profiling, and nuclear biology research.

Application Notes

Optimal dilution of the Histone H3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human Histone H3 recombinant protein (Position: Q56—R117) was used as the immunogen for the Histone H3 antibody.

Storage

After reconstitution, the Histone H3 antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.