

## Histone H3.3 Rabbit pAb

CatalogNo: YT2170

### Key Features

#### Host Species

- Rabbit

#### Reactivity

- Human, Mouse, Rat

#### Applications

- WB, IHC, IF, ELISA

#### MW

- 15kD (Observed)

#### Isotype

- IgG

### Recommended Dilution Ratios

**WB 1:500-2000**

**IHC 1:100-1:300**

**IF 1:200-1:1000**

**ELISA 1:5000**

**Not yet tested in other applications.**

### Storage

#### Storage\*

-15°C to -25°C/1 year (Do not lower than -25°C)

#### Formulation

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

### Basic Information

#### Clonality

Polyclonal

### Immunogen Information

#### Immunogen

The antiserum was produced against synthesized peptide derived from human Histone H3.3. AA range: 16-65

#### Specificity

Histone H3.3 Polyclonal Antibody detects endogenous levels of Histone H3.3 protein.

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## | Target Information

**Gene name** H3F3A

**Protein Name** Histone H3.3

Organism	Gene ID	UniProt ID
Human	<a href="#">3020</a> ; <a href="#">3021</a> ;	<a href="#">P84243</a> ;
Mouse	<a href="#">15078</a> ;	<a href="#">P84244</a> ;
Rat	<a href="#">117056</a> ;	<a href="#">P84245</a> ;

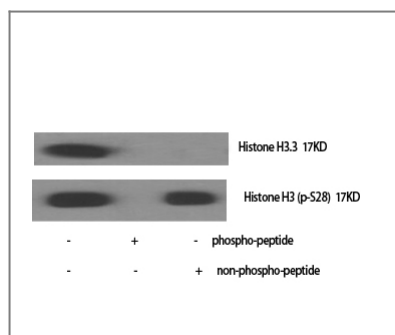
**Cellular Localization** Nucleus. Chromosome.

**Tissue specificity** Bone marrow,Brain,Colon,Epithelium,Eye,Fibroblast,Lung,Muscle,Retina,Spinal

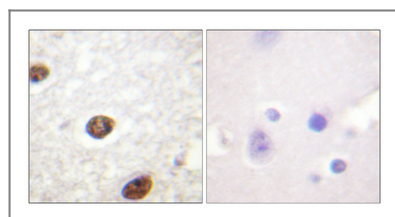
## Function

developmental stage: Expressed throughout the cell cycle independently of DNA synthesis. Function: Variant histone H3 which replaces conventional H3 in a wide range of nucleosomes in active genes. Constitutes the predominant form of histone H3 in non-dividing cells and is incorporated into chromatin independently of DNA synthesis. Deposited at sites of nucleosomal displacement throughout transcribed genes, suggesting that it represents an epigenetic imprint of transcriptionally active chromatin. Nucleosomes wrap and compact DNA into chromatin, limiting DNA accessibility to the cellular machineries which require DNA as a template. Histones thereby play a central role in transcription regulation, DNA repair, DNA replication and chromosomal stability. DNA accessibility is regulated via a complex set of post-translational modifications of histones, also called histone code, and nucleosome remodeling. online information: Histone H3 entry, PTM: Acetylation is generally linked to gene activation. Acetylation on Lys-10 (H3K9ac) impairs methylation at Arg-9 (H3R8sme2). Acetylation on Lys-19 (H3K18ac) and Lys-24 (H3K24ac) favors methylation at Arg-18 (H3R17me). PTM: Asymmetric dimethylation at Arg-18 (H3R17me2a) by CARM1 is linked to gene activation. Symmetric dimethylation at Arg-9 (H3R8sme2) by PRMT5 is linked to gene repression. Asymmetric dimethylation at Arg-3 (H3R2me2a) by PRMT6 is linked to gene repression and is mutually exclusive with H3 Lys-5 methylation (H3K4me2 and H3K4me3). H3R2me2a is present at the 3' of genes regardless of their transcription state and is enriched on inactive promoters, while it is absent on active promoters. PTM: Citrullination at Arg-9 (H3R8ci) and/or Arg-18 (H3R17ci) by PADI4 impairs methylation and represses transcription. PTM: Phosphorylated at Thr-4 (H3T3ph) by GSG2/haspin during prophase and dephosphorylated during anaphase. At centromeres, specifically phosphorylated at Thr-12 (H3T11ph) from prophase to early anaphase, probably DAPK3. Phosphorylation at Ser-11 (H3S10ph) by AURKB is crucial for chromosome condensation and cell-cycle progression during mitosis and meiosis. In addition phosphorylation at Ser-11 (H3S10ph) by RPS6KA4 and RPS6KA5 is important during interphase because it enables the transcription of genes following external stimulation, like mitogens, stress, growth factors or UV irradiation and result in the activation of genes, such as c-fos and c-jun. Phosphorylation at Ser-11 (H3S10ph), which is linked to gene activation, prevents methylation at Lys-10 (H3K9me) but facilitates acetylation of H3 and H4. Phosphorylation at Ser-11 (H3S10ph) by AURKB mediates the dissociation of HP1 proteins (CBX1, CBX3 and CBX5) from heterochromatin. Phosphorylation at Ser-11 (H3S10ph) is also an essential regulatory mechanism for neoplastic cell transformation. Phosphorylated at Ser-29 by MLTK isoform 1, RPS6KA5 or AURKB during mitosis or upon ultraviolet B irradiation. Phosphorylation on Ser-32 is specific to regions bordering centromeres in metaphase chromosomes. PTM: Specifically enriched in modifications associated with active chromatin such as methylation at Lys-5 (H3K4me), Lys-37 and Lys-80. Methylation at Lys-5 (H3K4me) facilitates subsequent acetylation of H3 and H4. Methylation at Lys-80 (H3K79me) is associated with DNA double-strand break (DSB) responses and is a specific target for TP53BP1. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me), which are linked to gene repression, are underrepresented. Methylation at Lys-10 (H3K9me) is a specific target for HP1 proteins (CBX1, CBX3 and CBX5) and prevents subsequent phosphorylation at Ser-11 (H3S10ph) and acetylation of H3 and H4. Methylation at Lys-5 (H3K4me) and Lys-80 (H3K79me) require preliminary monoubiquitination of H2B at 'Lys-120'. Methylation at Lys-10 (H3K9me) and Lys-28 (H3K27me) are enriched in inactive X chromosome chromatin. PTM: Ubiquitinated. similarity: Belongs to the histone H3 family. subunit: The nucleosome is a histone octamer containing two molecules each of H2A, H2B, H3 and H4 assembled in one H3-H4 heterotetramer and two H2A-H2B heterodimers. The octamer wraps approximately 147 bp of DNA. subunit: The nucleosome is a histone octamer containing two molecules each of H2A, H2B, H3 and H4 assembled in one H3-H4 heterotetramer and two H2A-H2B heterodimers. The octamer wraps approximately 147 bp of DNA. Interacts with HIRA, a chaperone required for its incorporation into nucleosomes.

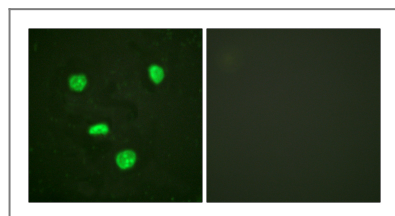
## Validation Data



Western Blot analysis of HeLa cells using Histone H3.3 Polyclonal Antibody diluted at 1:1000 cells nucleus extracted by Minute TM Cytoplasmic and Nuclear Fractionation kit (SC-003, Invent biotech, MN, USA).



Immunohistochemical analysis of paraffin-embedded Human brain. Antibody was diluted at 1:100 (4° overnight). High-pressure and temperature Tris-EDTA, pH 8.0 was used for antigen retrieval. Negative control (right) obtained from antibody was pre-absorbed by immunogen peptide.



Immunofluorescence analysis of HeLa cells, using Histone H3.3 Antibody. The picture on the right is blocked with the synthesized peptide.

## Contact information

Orders: [order@immunoway.com](mailto:order@immunoway.com)  
Support: [tech@immunoway.com](mailto:tech@immunoway.com)  
Telephone: 877-594-3616 (Toll Free), 408-747-0185  
Website: <http://www.immunoway.com>  
Address: 2200 Ringwood Ave San Jose, CA 95131 USA



Please scan the QR code to access additional product information:  
**Histone H3.3 Rabbit pAb**

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