

PRODUCT INFORMATION

Histone H3.3^{G34W} Rabbit Monoclonal Antibody (Clone RM263)

Item No. 32103

Overview and Properties

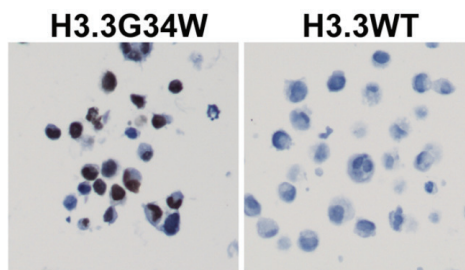
Contents:	This vial contains 100 or 400 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	H3.3 G34W, H3.3 ^{G34W}
Immunogen:	A peptide corresponding to histone H3.3 ^{G34W} mutant
Cross Reactivity:	(+) H3.3 ^{G34W} ; (-) H3.3
Species Reactivity:	(+) Vertebrates
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM263
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution for ELISA is 1:125-1:500, 1:100-1:200 for IHC, and 1:125-1:500 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: G34W cell lysates
Lane 2: Wild-type H3.3

Western blot analysis of lysates prepared from 293T cells, transfected with a DNA construct encoding G34W mutant or wild-type histone H3.3, using Histone H3.3^{G34W} Rabbit Monoclonal Antibody (Clone RM263).



Immunohistochemical staining of formalin-fixed and paraffin-embedded 293T cells transfected with a DNA construct encoding histone H3.3^{G34W} mutant or wild type, stained with Histone H3.3^{G34W} Rabbit Monoclonal Antibody (Clone RM263).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM

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Description

Histone H3 is a nuclear protein and component of the nucleosome core, a basic unit of chromatin, that is essential for organizing genomic DNA in eukaryotic nuclei.¹ It is a globular protein that contains an unstructured N-terminal tail that extends outside of the nucleosome core and is subject to various post-translational modifications (PTMs). Metazoans have three histone variants: canonical histone H3.1, DNA replication-independent histone H3.3, and the centromeric variant CENP-A.² Histone H3.3 is incorporated into chromatin in a DNA replication-independent manner at sites of active transcription.²⁻⁴ Histone H3.3^{G34W} is a point mutation expressed in giant cell tumors of bone (GCTBs) and is associated with tumor recurrence and metastasis.⁵ Cayman's Histone H3.3^{G34W} Rabbit Monoclonal Antibody (Clone RM263) can be used for ELISA, immunohistochemistry (IHC), and Western blot (WB) applications.

References

1. Hyun, K., Jeon, J., Park, K., *et al.* Writing, erasing and reading histone lysine methylations. *Exp. Mol. Med.* **49**(4), e324 (2017).
2. Elsaesser, S.J., Goldberg, A.D., and Allis, C.D. New functions for an old variant: No substitute for histone H3.3. *Curr. Opin. Genet. Dev.* **20**(2), 110-117 (2010).
3. Bjerke, L., Mackay, A., Nandhabalan, M., *et al.* Histone H3.3 mutations drive pediatric glioblastoma through upregulation of MYCN. *Cancer Discov.* **3**(5), 512-519 (2013).
4. Tagami, H., Ray-Gallett, D., Almouzni, G., *et al.* Histone H3.1 and H3.3 complexes mediate nucleosome assembly pathways dependent or independent of DNA synthesis. *Cell* **116**(1), 51-61 (2004).
5. Yamamoto, H., Iwasaki, T., Yamada, Y., *et al.* Diagnostic utility of histone H3.3 G34W, G34R, and G34V mutant-specific antibodies for giant cell tumors of bone. *Hum. Pathol.* **73**, 41-50 (2018).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
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FAX: [734] 971-3640
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