PRODUCT INFORMATION

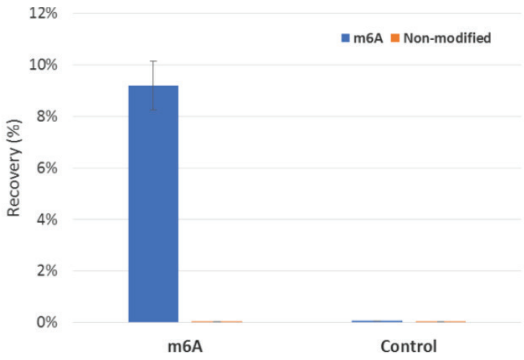
IgG4 Fc (human) Rabbit Monoclonal Antibody - Biotinylated (Clone RM362)

Item No. 32164

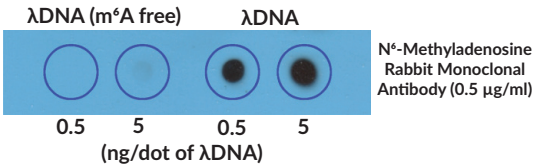
Overview and Properties

Contents:	This vial contains 50 µg of protein A-affinity purified monoclonal antibody.
Synonym:	Immunoglobulin G4
Immunogen:	Peptide from the Fc region of human IgG4
Cross Reactivity:	(+) IgG4; (-) Human IgG1, IgG2, IgG3, IgM, IgA, IgD, IgE; (-) Goat, mouse, rat IgG
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM217
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA; the recommended starting concentration is .05-0.2 µg/ml for ELISA. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



MeRIP was performed using M^{6}A and control RNA from NEB (E1610). Antibodies (N^6-Methyladenosine Rabbit Monoclonal Antibody (Clone RM362) and Polyethylene Glycol) were mixed for a short time, with Protein A beads before the addition of m^{6}A labelled and non- labelled RNA in equal amounts. Captured RNA was then washed, eluted and run through RT-PCR. Resulting cDNA was then analyzed using real time PCR with specific probes to m^{6}A labelled and non-labelled sequences.



DB of λDNA with or without m^{6}A using N^6-Methyladenosine Rabbit Monoclonal Antibody (Clone RM362). The membrane was pre-spotted with 5 and 0.5 ng/dot of λDNA. m^{6}A-free DNA was isolated from bateriophage λ grown in an adenine methylase-deficient *E. coli* host.

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

N^6-Methyladenosine (m^{6}A) is an abundant post-transcriptional RNA modification that is found in various classes of eukaryotic or viral RNA, including mRNA, rRNA, tRNA, snRNA, microRNA (miRNA), and long non-coding RNA (lncRNA).[1,2] m^{6}A modifications are enriched near stop codons of mRNA transcripts, increasing along the length of the coding region and decreasing after 3'-UTRs.[2,3] m^{6}A formation is a reversible process that occurs primarily in the nucleus.[4] Its formation is catalyzed by a methyltransferase complex that is composed of the writers METTL3 and METTL14, which preferentially methylate RNA substrates with a GGACU domain, and the accessory protein Wilms tumor 1-associating protein (WTAP), which recruits target RNAs.[2] m6A demethylation is mediated by the erasers fat mass and obesity-associated (FTO) protein and ALKBH5. Upon export into the cytosol, m^{6}A modifications are recognized by a variety of reader proteins, including YTH-domain family (YTHDF) members, which regulate RNA translation. m^{6}A modifications regulate multiple steps of RNA processing, including pre-mRNA splicing, nuclear export, translation, and decay, influencing a variety of critical cellular functions, such as differentiation, neurodevelopment, immunity, and oncogenesis.[1,2,5] Global m^{6}A mRNA levels are decreased in tumor tissue isolated from patients with endometrial cancer.[6] Cayman's N^6-Methyladenosine Rabbit Monoclonal Antibody (Clone RM362) can be used for dot blot (DB), ELISA, and methylated RNA immunoprecipitation (MeRIP) applications.

References

1. Yang, C., Hu, Y., Zhou, B., *et al*. The role of m^{6}A modification in physiology and disease. *Cell Death Dis*. **11(11)**, 960 (2020).
2. Zhang, C., Fu, J., and Zhou, Y. A review in research progress concerning m^{6}A methylation and immunoregulation. *Front Immunol*. **10**, 922 (2019).
3. Meyer, K.D., Saletore, Y., Zumbo, P., *et al*. Comprehensive analysis of mRNA methylation reveals enrichment in 3' UTRs and near stop codons. *Cell* **149(7)**, 1635-1646 (2012).
4. Zaccara, S., Ries, R.J., and Jaffrey, S.R. Reading, writing and erasing mRNA methylation. *Nav. Rev. Mol. Cell Biol*. **20(10)**, 608-624 (2019).
5. Sun, T., Wu, R., and Ming, L. The role of m^{6}A RNA methylation in cancer. Biomed. Pharmacother. 112, 108613 (2019).
6. Liu, J., Eckert, M.A., Harada, B.T., *et al*. m^{6}A mRNA methylation regulates AKT activity to promote the proliferation and tumorigenicity of endometrial cancer. *Nat. Cell Biol*. **20(9)**, 1074-1083 (2018).

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