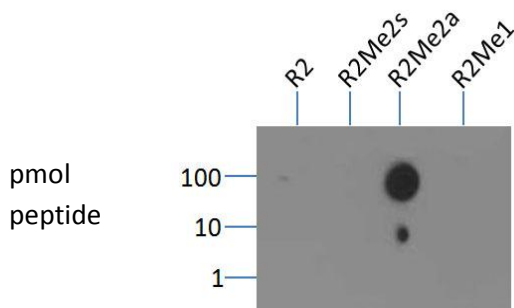


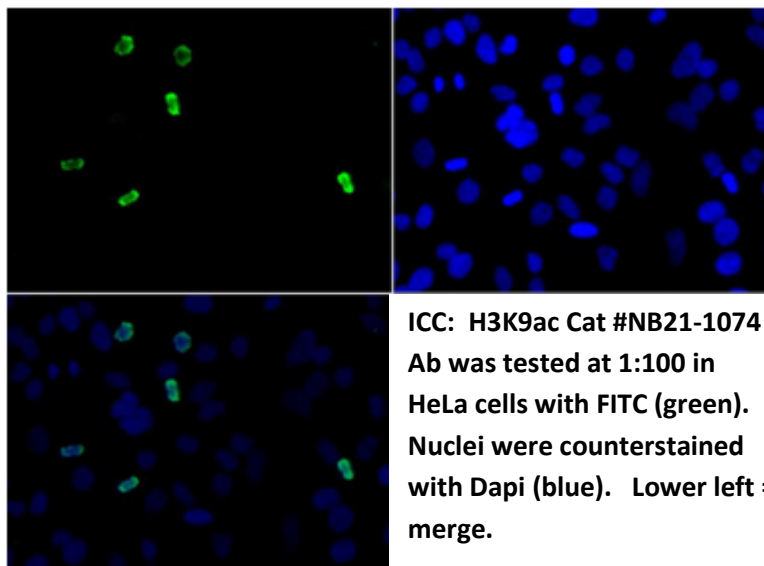
H3R2ADMA pAb: Cat# NB21-1002

Description:	Histone H3 asymmetrical methylated arginine 2 pAb	Cat#:	NB21-1002
Species:	Human, mouse, rat	Gene:	HIST2H3C
Applications:	Westerns, dot blots, CHIP	Ab Type:	Rabbit affinity purified pAb
Modification:	R2Me2a	Marker:	H3R2Me2a
Immunogen:	Synthetic peptide containing asymmetrical methylated arginine (ADMA) 2 of histone H3		
Gene Symbol:	HIST2H3C Entrez: 126961 (hu), 260423 (mu) Swiss Prot: Q71DI3 (hu), P84228 (mu)		

Images:



Dot blot of Cat # NB21-1002, H3R2Me2a pAb



Background:

The nucleosome is comprised of 146 bp of DNA wrapped around a series of histone proteins arranged as an octamer consisting of 2 copies of histone H2A, H2B, H3 and H4 (1). Within the nucleosome core the histone proteins are covalently modified at specific residues predominantly within the N-terminal tail including lysine (acetylation, methylation, SUMOylation, and ubiquitylation), arginine methylation and citrullination, serine and threonine phosphorylation, as

well as proline isomerization (2,3). The lysine side chains can carry up to three methyl groups (mono-, di- and trimethylated forms) and the arginine side chain can be monomethylated or can be dimethylated as the symmetric or asymmetric forms. The modifications show temporal, disease-specific, and other types of cell-specific regulation and there are specific families of enzymes that regulate the methylation, demethylation, acetylation, deacetylation and other modifications (4-8).

Arginine methylation is found on both nuclear and cytoplasmic proteins. Protein arginine N-methyltransferases (PRMTs) catalyze the methylation of arginine residues. Type I PRMTs (PRMT 1, 3, 4 [aka CARM1], 5, and 8) catalyze the formation of monomethyl arginine (MMA) which is then converted to asymmetrical dimethyl arginine (SDMA). Type II PRMTs (PRMT 5, 7, and FBXO11) also regulates a number of different cellular processes, including transcriptional regulation, DNA damage repair, RNA metabolism, protein trafficking and signal transduction. PRMTs methylate glycine- and arginine-rich patches (GAR motifs) and it has also been shown that PRMT4 (CARM1) and PRMT5 can methylate PGM motifs (proline, glycine, methionine and arginine rich domains). The activity of PRMT2 and 9 has yet to be determined.

1. Hayes JJ and Hansen JC. Nucleosomes and the chromatin fiber. *Curr Opin Genet Dev.* [2001] 11(2):124-9.
2. Berger SL. The complex language of chromatin regulation during transcription. *Nature.* [2007] 447(7143):407-12.
3. Zee, BM, Levin, RS, DiMaggio, PA and Garcia, BA. Global Turnover of histone post-translational modifications and variants in human cells. *Epigenetics and Chromatin.* [2010] 3:22.
4. Couture JF, Trievel RC. Histone-modifying enzymes: encrypting an enigmatic epigenetic code. *Curr Opin Struct Biol.* [2006] 16(6):753-60.
5. Heintzman ND, Stuart RK, Hon G, Fu Y, Ching CW, Hawkins RD, Barrera LO, Van Calcar S, Qu C, Ching KA, Wang W, Weng Z, Green RD, Crawford GE, Ren B. Distinct and predictive chromatin signatures of transcriptional promoters and enhancers in the human genome. *Nat Genet.* [2007] 39(3):311-8.
6. Barski A, Cuddapah S, Cui K, Roh TY, Schones DE, Wang Z, Wei G, Chepelev I, Zhao K. High-resolution profiling of histone methylations in the human genome. *Cell.* [2007] 129(4):823-37.
7. Bernstein BE, Meissner A, Lander ES. The mammalian epigenome. *Cell.* [2007] 128(4):669-81.
8. Rando OJ. Global patterns of histone modifications. *Curr Opin Genet Dev.* [2007] 17(2):94-9.

Dilutions: WB – 1ug/ml; ChIP 2-5 micrograms per 10⁶ cells.

Unit Size: 50 micrograms (0.05mg) and 25 micrograms (0.025mg)

Storage: Short term storage at 4°C, long term storage at -20°C. Avoid unnecessary freeze-thaw.

Buffer: PBS, pH 7.4 with 30% glycerol

Preservative: 0.05% sodium azide

Limitations: This product is for research purposes only and is not approved for use in clinical diagnostics or for use in humans.

[Ask a question](#)

Twentyfirst Century Biochemicals, Inc. 260 Cedar Hill Street, Marlborough, MA 01752

P:508.303.8222 F:508.3038333 E: info@21stcenturybio.com

Epi-Plus™ Epigenetic Antibodies are made in collaboration with Novus Biologicals, LLC

© 2011 Twentyfirst Century Biochemicals, Inc. All rights reserved.

Epi-SynH3™, Epi-SynH4™, and MS Check™ are wholly owned trademarks of Twentyfirst Century Biochemicals, Inc; Epi-Plus™ is a shared trademark of Twentyfirst Century Biochemicals, Inc. and Novus Biologicals, LLC.