Revision 1

Store at -20C

#27502

# Mono-Methyl Arginine (R*GG) (D5A12) Rabbit mAb (HRP Conjugate)

Cell Signaling TECHNOLOGY®

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Applications: | Reactivity: | Sensitivity: | Source/Isotype: |
|---|---|---|---|
| W | All | Endogenous | Rabbit |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |

## Storage

Supplied in 136 mM NaCl, 2.6 mM KCl, 12 mM sodium phosphate (pH 7.4) dibasic, 2 mg/ml BSA, and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

Mono-Methyl Arginine (R*GG) (D5A12) Rabbit mAb (HRP Conjugate) recognizes endogenous levels of proteins only when mono-methylated at arginine. The antibody prefers Arg-Gly-Gly motifs. The antibody does not cross-react with di-methyl arginine or unmethylated arginine.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic mono-methyl arginine peptide library containing R*GG motifs.

## Description

This Cell Signaling Technology antibody is conjugated to the carbohydrate groups of horseradish peroxidase (HRP) via its amine groups. The HRP conjugated antibody is expected to exhibit the same species cross-reactivity as the unconjugated Mono-Methyl Arginine (R*GG) (D5A12) Rabbit mAb #8711.

## Background

Arginine methylation is a prevalent PTM found on both nuclear and cytoplasmic proteins. Arginine methylated proteins are involved in many different cellular processes, including transcriptional regulation, signal transduction, RNA metabolism, and DNA damage repair (1-3). Arginine methylation is carried out by the arginine N-methyltransferase (PRMT) family of enzymes that catalyze the transfer of a methyl group from S-adenosylmethionine (AdoMet) to a guanidine nitrogen of arginine (4). There are three different types of arginine methylation: asymmetric dimethylarginine (aDMA, omega-NG,NG-dimethylarginine), where two methyl groups are placed on one of the terminal nitrogen atoms of the guanidine group of arginine; symmetric dimethylarginine (sDMA, omega-NG,NG-dimethylarginine), where one methyl group is placed on each of the two terminal guanidine nitrogens of arginine; and monomethylarginine (MMA, omega-NG-methylarginine), where a single methyl group is placed on one of the terminal nitrogen atoms of arginine. Each of these modifications has potentially different functional consequences. Though all PRMT proteins catalyze the formation of MMA, Type I PRMTs (PRMT1, 3, 4, 6, and 8) add an additional methyl group to produce aDMA, while Type II PRMTs (PRMT5 and 7) produce sDMA. Methylated arginine residues often reside in glycine-arginine rich (GAR) protein domains, such as RGG, RG, and RXR repeats (5). However, PRMT4/CARM1 and PRMT5 methylate arginine residues within proline-glycine-methionine rich (PGM) motifs (6).

## Background References

1. Bedford, M.T. and Richard, S. (2005) *Mol Cell* 18, 263-72.
2. Pahlich, S. et al. (2006) *Biochim Biophys Acta* 1764, 1890-903.
3. Bedford, M.T. and Clarke, S.G. (2009) *Mol Cell* 33, 1-13.
4. McBride, A.E. and Silver, P.A. (2001) *Cell* 106, 5-8.
5. Gary, J.D. and Clarke, S. (1998) *Prog Nucleic Acid Res Mol Biol* 61, 65-131.
6. Cheng, D. et al. (2007) *Mol Cell* 25, 71-83.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting

## Cross-Reactivity Key

**All:** All Species Expected

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