

## Product Information

### Monoclonal Anti-PRMT4

#### Clone PRMT4-243

Ascites fluid

Product Number **P 0623**

### Product Description

Monoclonal Anti-PRMT4 (Protein Arginine Methyl Transferase 4) (mouse IgG3 isotype) is derived from the PRMT4-243 hybridoma produced by the fusion of mouse myeloma cells (NS1) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 48-63 of human PRMT4, conjugated to KLH. The isotype is determined using Sigma ImmunoType<sup>™</sup> Kit (Sigma ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2).

Monoclonal Anti-PRMT4 recognizes human, monkey, bovine, canine, rat, and mouse PRMT4 by ELISA and immunoblotting (~ 66 kDa). The antibody does not cross react with PRMT 1, 2, 3, 5, and 6.

Posttranslational modifications of proteins play an important role in the regulation of protein function, stability and localization. Such modifications occur on different amino acids and include phosphorylation, glycosylation, acetylation, or methylation.<sup>1</sup> Methylation can occur at lysine or arginine residues.<sup>2,3</sup> Methylation of arginine is mediated by the Protein Arginine Methyl Transferase (PRMT) family of enzymes. These enzymes transfer the methyl group from S-adenosyl-L-methionine to the guanidino nitrogen atoms of an arginine residue. Arginine methylation was found to be an important modification in signal transduction, transcription, RNA transport and splicing.<sup>4,5</sup>

PRMTs are divided into two major types, type I and type II. Both types catalyze the formation of monomethylarginine, but differ in that Type I (including PRMT1, 3, 4, and 6) catalyzes the formation of asymmetric dimethylarginine, whereas type II (PRMT5) catalyzes the formation of symmetric dimethylarginine.<sup>6-8</sup>

PRMT4 (also called CARM1) plays a central role in regulation of transcription by nuclear hormone receptors (NRs).<sup>3</sup> Transcriptional activation by NRs is mediated by the NR (or p160) coactivators. Transcriptional coactivators modify chromatin structure locally and help recruit an RNA polymerase II transcription initiation complex to the gene promoter.<sup>9</sup> Actually, CARM1 was isolated in a two-hybrid screening library using the p160 coactivator (GRP1) as a bait.<sup>3</sup> This interaction enhances transcriptional activation by nuclear receptors, possibly as a result of the specific methylation of histone H3 by PRMT4.<sup>10</sup> Other substrates of PRMT4 have remained elusive. The number of substrates was broadened when PABP1 (poly (A)-binding protein) was identified using a protein array.<sup>11</sup>

Antibodies specific for PRMT4 (CARM1) are an important tool for studying the biology of PRMTs.

### Reagent

Monoclonal Anti-PRMT4 is supplied as ascites fluid with 15 mM sodium azide.

### Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

### Product Profile

By immunoblotting, a working antibody dilution of 1:2,000-1:4,000 is recommended using a whole cell extract of 293T cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

### References

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