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PRDM2 (RIZ1) Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM1194a

Product Information

Application	WB, CHIP, E
Primary Accession	Q13029
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse IgG1
Clone Names	33AT1045
Calculated MW	188915
Antigen Region	1-347

Additional Information

Gene ID	7799
Other Names	PR domain zinc finger protein 2, GATA-3-binding protein G3B, Lysine N-methyltransferase 8, MTB-ZF, MTE-binding protein, PR domain-containing protein 2, Retinoblastoma protein-interacting zinc finger protein, Zinc finger protein RIZ, PRDM2, KMT8, RIZ
Target/Specificity	Purified recombinant GST fusion protein encoding aa 1-347 of human RIZ1. This antibody is specific for RIZ1, it does not recognize the isoform beta (RIZ2).
Dilution	WB~~1:1000 CHIP~~1:100 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PRDM2 (RIZ1) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PRDM2
Synonyms	KMT8, RIZ

Function	S-adenosyl-L-methionine-dependent histone methyltransferase that specifically methylates 'Lys-9' of histone H3 (PubMed:14633678). May function as a DNA-binding transcription factor (PubMed:8654390). Binds to the macrophage-specific TPA-responsive element (MTE) of the HMOX1 (heme oxygenase 1) gene and may act as a transcriptional activator of this gene (PubMed:8654390).
Cellular Location	Nucleus
Tissue Location	Highly expressed in retinoblastoma cell lines and in brain tumors. Also expressed in a number of other cell lines and in brain, heart, skeletal muscle, liver and spleen. Isoform 1 is expressed in testis at much higher level than isoform 3

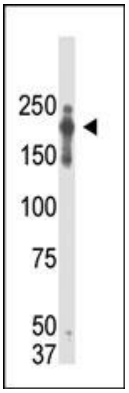
Background

This tumor suppressor gene is a member of a nuclear histone/protein methyltransferase superfamily. It encodes a zinc finger protein that can bind to retinoblastoma protein, estrogen receptor, and the TPA-responsive element (MTE) of the heme-oxygenase-1 gene. Although the functions of this protein have not been fully characterized, it may (1) play a role in transcriptional regulation during neuronal differentiation and pathogenesis of retinoblastoma, (2) act as a transcriptional activator of the heme-oxygenase-1 gene, and (3) be a specific effector of estrogen action. Multiple transcript variants encoding different isoforms have been found for this gene.

References

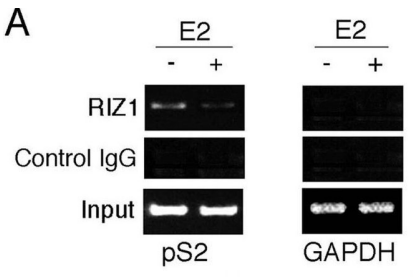
Genotypes and haplotypes of the estrogen receptor genes, but not the retinoblastoma-interacting zinc finger protein 1 gene, are associated with osteoporosis. HarslÞf T, et al. Calcif Tissue Int, 2010 Jul. PMID 20508921.
DNA methylation of the RIZ1 tumor suppressor gene plays an important role in the tumorigenesis of cervical cancer. Cheng HY, et al. Eur J Med Res, 2010 Jan 29. PMID 20159667.
Genetic variants of methyl metabolizing enzymes and epigenetic regulators: associations with promoter CpG island hypermethylation in colorectal cancer. de Vogel S, et al. Cancer Epidemiol Biomarkers Prev, 2009 Nov. PMID 19843671.
Expression of RIZ1 protein (Retinoblastoma-interacting zinc-finger protein 1) in prostate cancer epithelial cells changes with cancer grade progression and is modulated in vitro by DHT and E2. Rossi V, et al. J Cell Physiol, 2009 Dec. PMID 19746436.
RIZ1 is potential CML tumor suppressor that is down-regulated during disease progression. Lakshmikuttyamma A, et al. J Hematol Oncol, 2009 Jul 14. PMID 19602237.

Images

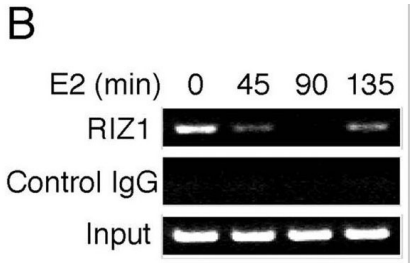


Western blot analysis of anti-PRDM2 Mab (Cat. #AM1194a) in lysate from PRDM2 transgenic lysate.Secondary HRP-anti-mouse was used for signal visualization with chemiluminescence.

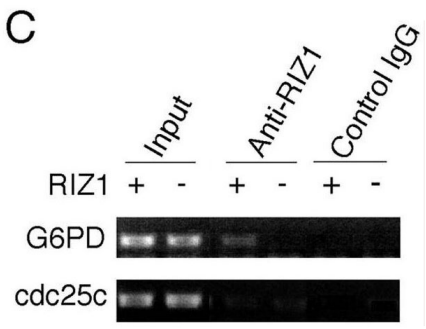
ChIP analysis of estrogen target genes. (A) Soluble chromatin was prepared from MCF7 cells not treated or



treated with E2 for 45 min. Immunoprecipitation was performed with antibody against RIZ1 (AM1194a). DNA extractions were amplified by using primer sets that cover the pS2 gene promoter region or the GAPDH gene promoter. Adapted from Fig 6 in Carling et al., 2004 (see citation 2).



ChIP analysis of estrogen target genes.(B) Time course analysis of RIZ1 binding to the pS2 gene promoter. MCF7 cells treated with E2 for different periods of time, as indicated at the top of each lane, were processed for ChIP analysis. Immunoprecipitation was performed with antibody to RIZ1 (AM1194a) and control immunoglobulin G as indicated. Adapted from Fig 6 in Carling et al., 2004 (see citation 2).



ChIP analysis of estrogen target genes. (C) ChIP analysis was performed on RIZ1 knockout mouse embryonic fibroblasts by using anti-RIZ1 antibody (AM1194a). Immunoprecipitated chromatin DNA was analyzed by PCR with primers in the G6pd promoter region and in the cdc25c promoter region. Adapted from Fig 6 in Carling et al., 2004 (see citation 2).

Citations

- Decreased Expression of Retinoblastoma Protein-Interacting Zinc-Finger Gene 1 Is Correlated With Poor Survival and Aggressiveness of Cervical Cancer Patients
- A histone methyltransferase is required for maximal response to female sex hormones.
- RIZ1 is potential CML tumor suppressor that is down-regulated during disease progression.

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