

# DMRT1 (A-9): sc-377167

## BACKGROUND

DMRT1 (doublesex- and mab-3-related transcription factor 1), also known as DMT1 or DM domain expressed in testis protein 1, is a 373 amino acid protein that contains a highly conserved zinc finger-like DNA-binding motif (DM domain). The DMRT genes encode a large family of transcription factors that participate in the sexual development of vertebrates and invertebrates. In humans, DMRT1 is expressed only in testis and is transported to the nucleus by karyopherin  $\beta$ 1. DMRT1 is required for testis development and may be involved in the formation of the seminiferous tubules. The gene encoding DMRT1 exhibits a gonad-specific and sexually dimorphic expression pattern during embryogenesis in mammals and birds. Hemizyosity of the DMRT1 gene results in abnormal testicular development and XY feminization. DMRT1 is expressed as four isoforms due to alternative splicing.

## CHROMOSOMAL LOCATION

Genetic locus: DMRT1 (human) mapping to 9p24.3; Dmrt1 (mouse) mapping to 19 B.

## SOURCE

DMRT1 (A-9) is a mouse monoclonal antibody raised against amino acids 134-373 mapping at the C-terminus of DMRT1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DMRT1 (A-9) is available conjugated to agarose (sc-377167 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377167 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377167 PE), fluorescein (sc-377167 FITC), Alexa Fluor<sup>®</sup> 488 (sc-377167 AF488), Alexa Fluor<sup>®</sup> 546 (sc-377167 AF546), Alexa Fluor<sup>®</sup> 594 (sc-377167 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-377167 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-377167 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-377167 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

DMRT1 (A-9) is recommended for detection of DMRT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DMRT1 siRNA (h): sc-92489, DMRT1 siRNA (m): sc-143060, DMRT1 shRNA Plasmid (h): sc-92489-SH, DMRT1 shRNA Plasmid (m): sc-143060-SH, DMRT1 shRNA (h) Lentiviral Particles: sc-92489-V and DMRT1 shRNA (m) Lentiviral Particles: sc-143060-V.

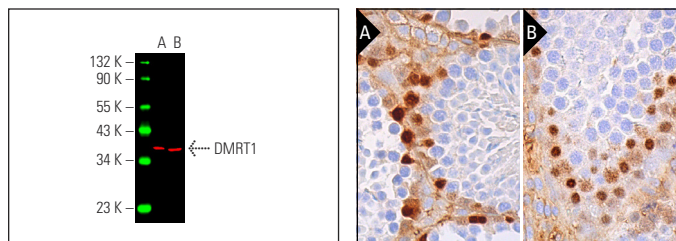
Molecular Weight of DMRT1: 39 kDa.

Positive Controls: U-2 OS cell lysate: sc-2295 or HL-60 whole cell lysate: sc-2209.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



DMRT1 (A-9) Alexa Fluor<sup>®</sup> 790: sc-377167 AF790. Direct near-infrared western blot analysis of DMRT1 expression in HL-60 (A) and U-2 OS (B) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Cruz Marker<sup>™</sup> Molecular Weight Standards detected with Cruz Marker<sup>™</sup> MW Tag-Alexa Fluor<sup>®</sup> 680: sc-516730.

DMRT1 (A-9): sc-377167. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse testis (A) and rat testis (B) tissue showing nuclear staining of subset of cells in seminiferous ducts and cytoplasmic staining of Leydig cells.

## SELECT PRODUCT CITATIONS

- Nakagawa, T., et al. 2017. Regulation of mitosis-meiosis transition by the ubiquitin ligase  $\beta$ -TrCP in male germ cells. *Development* 144: 4137-4147.
- Spade, D.J., et al. 2019. All-*trans* retinoic acid disrupts development in *ex vivo* cultured fetal rat testes. I: altered seminiferous cord maturation and testicular cell fate. *Toxicol. Sci.* 167: 546-558.
- Ishiguro, K.I., et al. 2020. MEIOSIN directs the switch from mitosis to meiosis in mammalian germ cells. *Dev. Cell* 52: 429-445.e10.
- Acquaviva, L., et al. 2020. Ensuring meiotic DNA break formation in the mouse pseudoautosomal region. *Nature* 582: 426-431.
- Kamaszewski, M., et al. 2020. The role of transcription factors in gonad development and sex differentiation of a teleost model fish—guppy (*Poecilia reticulata*). *Animals* 10: 2401.
- Guo, J., et al. 2021. Single-cell analysis of the developing human testis reveals somatic niche cell specification and fetal germline stem cell establishment. *Cell Stem Cell* 28: 764-778.e4.
- Taguchi, J., et al. 2021. DMRT1-mediated reprogramming drives development of cancer resembling human germ cell tumors with features of totipotency. *Nat. Commun.* 12: 5041.
- Zuo, W., et al. 2021. Stage-resolved Hi-C analyses reveal meiotic chromosome organizational features influencing homolog alignment. *Nat. Commun.* 12: 5827.
- Malolina, E.A., et al. 2022. Establishment of a pure culture of immature Sertoli cells by PDGFRA staining and cell sorting. *Mol. Reprod. Dev.* 89: 243-255.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.