

MZT2A/B (B-10): sc-514516

BACKGROUND

MZT2A and MZT2B, also known as FAM128A and FAM128B or mitotic-spindle organizing protein 2A/2B, are both 158 amino acid proteins in the MOZART2 family. The MZT2A and MZT2B genes are located on chromosome 2q21.1. The second largest human chromosome, 2 consists of 237 million bases encoding over 1,400 genes and making up approximately 8% of the human genome. A number of genetic diseases are linked to genes on chromosome 2. Harlequin ichthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene. The lipid metabolic disorder sitosterolemia is associated with ABCG5 and ABCG8. An extremely rare recessive genetic disorder, Alström syndrome is due to mutations in the ALMS1 gene. Interestingly, chromosome 2 contains what appears to be a vestigial second centromere and vestigial telomeres which gives credence to the hypothesis that human chromosome 2 is the result of an ancient fusion of two ancestral chromosomes seen in modern form today in apes.

REFERENCES

1. Ijdo, J.W., et al. 1991. Origin of human chromosome 2: an ancestral telomere-telomere fusion. *Proc. Natl. Acad. Sci. USA* 88: 9051-9055.
2. Avarello, R., et al. 1992. Evidence for an ancestral alphoid domain on the long arm of human chromosome 2. *Hum. Genet.* 89: 247-249.
3. Hillier, L.W., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. *Nature* 434: 724-731.
4. Thomas, A.C., et al. 2006. ABCA12 is the major harlequin ichthyosis gene. *J. Invest. Dermatol.* 126: 2408-2413.

CHROMOSOMAL LOCATION

Genetic locus: MZT2A/MZT2B (human) mapping to 2q21.1.

SOURCE

MZT2A/B (B-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 126-145 near the C-terminus of FAM128B of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MZT2A/B (B-10) is available conjugated to agarose (sc-514516 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514516 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514516 PE), fluorescein (sc-514516 FITC), Alexa Fluor[®] 488 (sc-514516 AF488), Alexa Fluor[®] 546 (sc-514516 AF546), Alexa Fluor[®] 594 (sc-514516 AF594) or Alexa Fluor[®] 647 (sc-514516 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-514516 AF680) or Alexa Fluor[®] 790 (sc-514516 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514516 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MZT2A/B (B-10) is recommended for detection of MZT2A and MZT2B of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

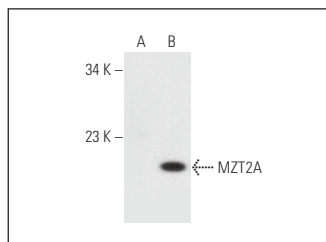
Molecular Weight of MZT2A/B: 16 kDa.

Positive Controls: MZT2A (h): 293T Lysate: sc-369014.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



MZT2A/B (B-10): sc-514516. Western blot analysis of MZT2A expression in non-transfected: sc-117752 (A) and human MZT2A transfected: sc-369014 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Heitor da Silva Maués, J., et al. 2020. Downregulated genes by silencing MYC pathway identified with RNA-SEQ analysis as potential prognostic biomarkers in gastric adenocarcinoma. *Aging* 12: 24651-24670.
2. Cao, L., et al. 2024. MZT2A serves as a prognostic biomarker and promotes the progression of kidney renal clear cell carcinoma. *Heliyon* 10: e35695.

STORAGE

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

RESEARCH USE

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