SANTA CRUZ BIOTECHNOLOGY, INC.

MIF (D-2): sc-271631

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Macrophage migration inhibitory factor, known as MIF or glycosylation-inhibiting factor, is a secreted, homotrimeric, pro-inflammatory cytokine that modulates macrophage and T cell function and is an important regulator of host response to infection. MIF is expressed at sites of inflammation, which suggests that it plays a role in regulating macrophage function in host defense. MIF is produced by the pituitary gland and is found in monocytes, macrophages, differentiating immunological cells in the eye lens and brain, and fibroblasts. Elevated levels of MIF protein are detected in the plasma of patients with severe sepsis or septic shock, a condition where MIF influences endotoxic shock by enhancing the production of other inflammatory cytokines including tumor necrosis factor α (TNFα), interleukin-1 (IL-1) and interferon-γ (IFN-γ). MIF promotes the systemic inflammatory response by counter-regulating glucocorticoid-mediated inhibition of immune-cell activation and proinflammatory cytokine production. MIF may mediate tissue destruction through the induction of proteinases.

REFERENCES

1. Weiser, W.Y., et al. 1989. Molecular cloning of a cDNA encoding a human macrophage migration inhibitory factor. Proc. Natl. Acad. Sci. USA 86: 7522-7526.
2. Paralkar, V., et al. 1994. Cloning the human gene for macrophage migration inhibitory factor (MIF). Genomics 19: 48-51.

CHROMOSOMAL LOCATION

Genetic locus: MIF (human) mapping to 22q11.23; Mif (mouse) mapping to 10 C1.

SOURCE

MIF (D-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 7-39 at the N-terminus of MIF of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MIF (D-2) is available conjugated to agarose (sc-271631 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271631 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-271631 PE), fluorescein (sc-271631 FITC) or Alexa Fluor® 488 (sc-271631 AF488) or Alexa Fluor® 647 (sc-271631 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-271631 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

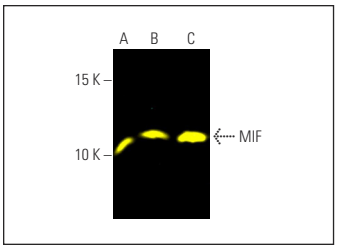
MIF (D-2) is recommended for detection of MIF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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). MIF (D-2) is also recommended for detection of MIF in additional species, including porcine.

Suitable for use as control antibody for MIF siRNA (h): sc-37137, MIF siRNA (m): sc-37138, MIF shRNA Plasmid (h): sc-37137-SH, MIF shRNA Plasmid (m): sc-37138-SH, MIF shRNA (h) Lentiviral Particles: sc-37137-V and MIF shRNA (m) Lentiviral Particles: sc-37138-V.

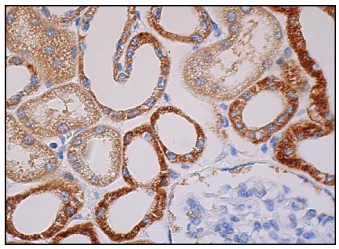
Molecular Weight of MIF: 13 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HL-60 whole cell lysate: sc-2209 or HEK293 whole cell lysate: sc-45136.

DATA



MIF (D-2) Alexa Fluor® 488: sc-271631 AF488. Direct fluorescent western blot analysis of MIF expression in Jurkat (**A**), HL-60 (**B**) and HEK293 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



MIF (D-2): sc-271631. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Tanaka, R., et al. 2013. Long-acting human serum albumin-thioredoxin fusion protein suppresses bleomycin-induced pulmonary fibrosis progression. J. Pharmacol. Exp. Ther. 345: 271-283.
2. Li, Z., et al. 2018. Staphylococcal superantigens use LAMA2 as a coreceptor to activate T cells. J. Immunol. 200: 1471-1479.
3. Cao, C., et al. 2019. Attenuation of sepsis-induced cardiomyopathy by regulation of microRNA-23b is mediated through targeting of MyD88-mediated NFκB activation. Inflammation 42: 973-986.
4. Song, H., et al. 2020. The role of macrophage migration inhibitory factor in promoting benign prostatic hyperplasia epithelial cell growth by modulating COX-2 and P53 signaling. Biol. Open 9: bio053447.
5. DoGan, E., et al. 2021. The effects of PIKfyve inhibitor YM201636 on claudins and malignancy potential of nonsmall cell cancer cells. Turk. J. Biol. 45: 26-34.

RESEARCH USE

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