SANTA CRUZ BIOTECHNOLOGY, INC.

MIF (4E4): sc-53915

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 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.
3. Bernhagen, J., et al. 1994. Purification, bioactivity and secondary structure analysis of mouse and human macrophage migration inhibitory factor (MIF). Biochemistry 33: 14144-14155.
4. Lubetsky, J.B., et al. 1999. Pro-1 of macrophage migration inhibitory factor functions as a catalytic base in the phenylpyruvate tautomerase activity. Biochemistry 38: 7346-7354.
5. Onodera, S., et al. 1999. High expression of macrophage migration inhibitory factor in the synovial tissues of rheumatoid joints. Cytokine 11: 163-167.
6. Benigni, F., et al. 2000. The proinflammatory mediator macrophage migration inhibitory factor induces glucose catabolism in muscle. J. Clin. Invest. 106: 1291-1300.
7. Calandra, T., et al. 2000. Protection from septic shock by neutralization of macrophage migration inhibitory factor. Nat. Med. 6: 164-170.

CHROMOSOMAL LOCATION

Genetic locus: MIF (human) mapping to 22q11.23.

SOURCE

MIF (4E4) is a mouse monoclonal antibody raised against amino acids 1-144 of MIF of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

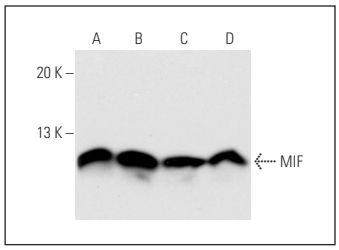
MIF (4E4) is recommended for detection of MIF of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

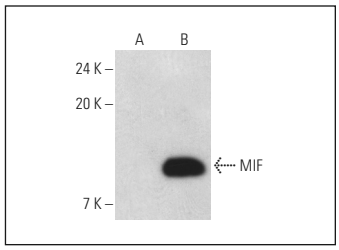
Molecular Weight of MIF: 13 kDa.

Positive Controls: Y79 cell lysate: sc-2240, MIF (h): 293T lysate: sc-116440 or HL-60 whole cell lysate: sc-2209.

DATA



MIF (4E4): sc-53915. Western blot analysis of MIF expression in HL-60 (**A**), Jurkat (**B**), AML-193 (**C**) and THP-1 (**D**) whole cell lysates.



MIF (4E4): sc-53915. Western blot analysis of MIF expression in non-transfected: sc-117752 (**A**) and human MIF transfected: sc-116440 (**B**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Huang, M.C., et al. 2010. Human $CD4^-8^-$ T cells are a distinctive immunoregulatory subset. FASEB J. 24: 2558-2566.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

See **MIF (D-2): sc-271631** for MIF antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.