

# DDT (1G1): sc-517061

## 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. The only known family member of MIF is D-dopachrome tautomerase (DDT), a protein that is thought to similarly play a role in the inflammation process. DDT is highly expressed in liver with lower levels in other organs, including heart, lung and pancreas. It resides in the cytoplasm as a homotrimer and converts 2-carboxy-2,3-dihydroindole-5, 6-quinone (D-dopachrome) into 5,6-dihydroxyindole. DDT requires the presence of an N-terminal proline residue for catalytic activity and is involved in the biosynthesis of melanin, an antioxidant. In response to liver damage, DDT has been shown to increase protein levels in order to accelerate melanin biosynthesis and protect the liver from oxidative stress.

## REFERENCES

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- Paralkar, V. and Wistow G. 1994. Cloning the human gene for macrophage migration inhibitory factor (MIF). *Genomics* 19: 48-51.
- Bernhagen, J., et al. 1994. Purification, bioactivity, and secondary structure analysis of mouse and human macrophage migration inhibitory factor (MIF). *Biochemistry* 33: 14144-14155.
- Yoshida, H., et al. 1997. NMR characterization of physicochemical properties of rat D-dopachrome tautomerase. *Biochem. Mol. Biol. Int.* 42: 891-899.
- Nishihira, J., et al. 1998. Molecular cloning of human D-dopachrome tautomerase cDNA: N-terminal proline is essential for enzyme activation. *Biochem. Biophys. Res. Commun.* 243: 538-544.
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- Sonesson, B., et al. 2003. UVB-induced inflammation gives increased D-dopachrome tautomerase activity in blister fluid which correlates with macrophage migration inhibitory factor. *Exp. Dermatol.* 12: 278-282.
- Hiyoshi, M., et al. 2009. D-dopachrome tautomerase is a candidate for key proteins to protect the rat liver damaged by carbon tetrachloride. *Toxicology* 255: 6-14.

## CHROMOSOMAL LOCATION

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

## SOURCE

DDT (1G1) is a mouse monoclonal antibody raised against amino acids 1-118 representing full length DDT of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

DDT (1G1) is recommended for detection of DDT of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DDT siRNA (h): sc-77103, DDT shRNA Plasmid (h): sc-77103-SH and DDT shRNA (h) Lentiviral Particles: sc-77103-V.

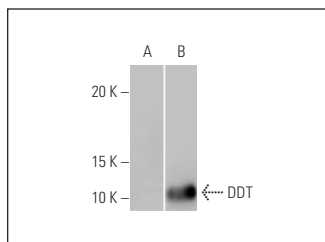
Molecular Weight of DDT: 12 kDa.

Positive Controls: DDT transfected 293T whole cell lysate.

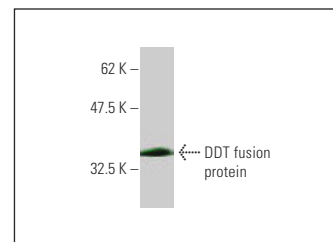
## RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



DDT (1G1): sc-517061. Western blot analysis of DDT expression in non-transfected (A) and DDT transfected (B) 293T whole cell lysates.



DDT (1G1): sc-517061. Western blot analysis of human recombinant DDT fusion protein.

## 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](http://www.scbt.com) for detailed protocols and support products.