SANTA CRUZ BIOTECHNOLOGY, INC.

DDT (E-17): sc-86406

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. 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-dihyroindole-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

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. Yoshida, H., et al. 1997. NMR characterization of physicochemical properties of rat D-dopachrome tautomerase. Biochem. Mol. Biol. Int. 42: 891-899.
5. 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.

CHROMOSOMAL LOCATION

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

SOURCE

DDT (E-17) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of DDT of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86406 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

DDT (E-17) is recommended for detection of DDT and DDTL 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)], 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).

DDT (E-17) is also recommended for detection of DDT and DDTL in additional species, including equine, canine and bovine.

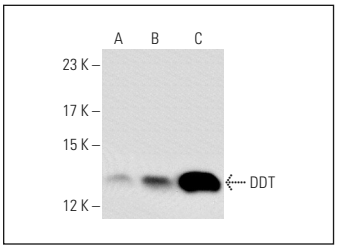
Molecular Weight of DDT: 12 kDa.

Positive Controls: DDT (h): 293T Lysate: sc-128416 or HeLa whole cell lysate: sc-2200.

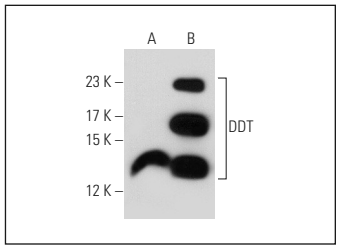
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), 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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



DDT (E-17): sc-86406. Western blot analysis of DDT expression in non-transfected 293T: sc-117752 (**A**), human DDT transfected 293T: sc-128415 (**B**) and HeLa (**C**) whole cell lysates.



DDT (E-17): sc-86406. Western blot analysis of DDT expression in non-transfected: sc-117752 (**A**) and human DDT transfected: sc-128416 (**B**) 293T whole cell lysates.

RESEARCH USE

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