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## Product Datasheet

### Human MIF protein, His tag (active), Unconjugated GTX00196-PRO

|                          |                                                                                                                                                                             |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Artikelname              | Human MIF protein, His tag (active), Unconjugated                                                                                                                           |
| Artikelnummer            | GTX00196-PRO                                                                                                                                                                |
| Hersteller Artikelnummer | GTX00196-pro                                                                                                                                                                |
| Alternativnummer         | GTX00196-PRO-10                                                                                                                                                             |
| Hersteller               | GeneTex                                                                                                                                                                     |
| Kategorie                | Proteine/Peptide                                                                                                                                                            |
| Applikation              | FA                                                                                                                                                                          |
| Spezies Reaktivität      | Human                                                                                                                                                                       |
| Konjugation              | Unconjugated                                                                                                                                                                |
| NCBI                     | <a href="#">4282</a>                                                                                                                                                        |
| UniProt                  | <a href="#">P14174</a>                                                                                                                                                      |
| Puffer                   | Reconstitute with 20mM Tris and 150mM NaCl to 0.1-1.0mg/ml. Do not vortex. Lyophilized from 20mM Tris, 150mM NaCl, 1mM EDTA, 1mM DTT, 0.01% SKL, 5% Trehalose, ProClin 300. |
| Expression System        | E. coli                                                                                                                                                                     |
| Formulierung             | Lyophilized powder                                                                                                                                                          |
| Sequenz                  | N-terminal His-Tag, Met3~Asn111 (NP_002406.1)                                                                                                                               |

#### Anwendungsbeschreibung

Macrophage migration inhibitory factor (MIF), also known as glycosylation-inhibiting factor (GIF), L-dopachrome isomerase, or phenylpyruvate tautomerase is a protein classified as an inflammatory cytokine. MIF is an important regulator of innate immunity. It is involved in cell-mediated immunity, immunoregulation, and inflammation. MIF plays a role in the regulation of macrophage function in host defense through the suppression of anti-inflammatory effects of glucocorticoids. This lymphokine and the JAB1 protein form a complex in the cytosol near the peripheral plasma membrane, which may indicate a role in integrin signaling pathways. Besides, Major Histocompatibility Complex Class II Invariant Chain (MHCI) has been identified as an interactor of MIF, thus a binding ELISA assay was conducted to detect the interaction of recombinant human MIF and recombinant human MHCI. Briefly, MIF were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 µl were then transferred to MHCI-coated microtiter wells and incubated for 2h at 37°C. Wells were washed with PBST and incubated for 1h with anti-MIF pAb, then aspirated and washed 3 times. After incubation with HRP-labelled secondary antibody, wells were aspirated and washed 3 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37°C. Finally, add 50 µl stop solution to the wells and read at 450nm immediately. The binding activity of MIF and MHCI was in a dose dependent manner. Macrophage migration inhibitory factor (MIF or MMIF), is a lymphokine involved in cell-mediated immunity, immunoregulation, and inflammation. MIF contains two motifs with catalytic activity. The first is a 27 amino acid motif located at the N-terminus functions as a phenylpyruvate tautomerase. MIF also contains a Cys-Ala-Leu-Cys catalytic site between residues 57 and 60 that appears to function as a disulfide reductase. Besides, MIF is overexpressed in various tumors and has been suggested as a molecular link between chronic inflammation and cancer. To measure the effect of MIF on cell proliferation, breast cancer MCF-7 cells were seeded into triplicate wells of 96-well plates at a density of 5000 cells/well and allowed to attach, replaced with serum-free DMEM prior to the addition of various concentrations of recombinant human MIF. After incubation for 96h, cells were observed by inverted microscope and cell proliferation was measured by Cell Counting Kit-8 (CCK-8). Briefly, 10 µl of CCK-8 solution was added to each well of the plate, then the absorbance at 450nm was measured using a microplate reader after incubating the plate for 1-4 hours at 37°C. Proliferation of MCF-7 cells after incubation with MIF for 96h observed by inverted microscope. Cell viability was assessed by CCK-8 assay after incubation with recombinant MIF for 96h. And MIF significantly increased cell viability of MCF-7 cells.