

APA698Hu61 100µg

Active Macrophage Migration Inhibitory Factor (MIF)

Organism Species: *Homo sapiens* (Human)

Instruction manual

FOR RESEARCH USE ONLY

NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Eukaryotic expression.

Host: 293F cell

Residues: Met3~Asn111

Tags: N-terminal His-tag

Purity: >90%

Endotoxin Level: <1.0EU per 1µg (determined by the LAL method).

Buffer Formulation: PBS, pH7.4, containing 5% Trehalose .

Original Concentration: 200µg/mL

Applications: Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

Predicted isoelectric point: 6.6

Predicted Molecular Mass: 13.4kDa

Accurate Molecular Mass: 13kDa as determined by SDS-PAGE reducing conditions.

[USAGE]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

[STORAGE AND STABILITY]

Storage: Avoid repeated freeze/thaw cycles.

Store at 2-8°C for one month.

Aliquot and store at -80°C for 12 months.

Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the

protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

[SEQUENCE]

MFIVNTNVPRASVPDGFSELTQQLAQATGKPPQYIAVHVVPDQLMAFGGSSEPCALCSLHSIG
KIGGAQNRSYSKLLCGLLAERLRISPDRVYINYYDMNAANVGWNN

[ACTIVITY]

Macrophage Migration Inhibitory Factor (MIF) is a pleiotropic cytokine that participates in both innate and adaptive immune responses. It is constitutively expressed in various cell types and rapidly released upon exposure to inflammatory stimuli, playing a pivotal role in regulating macrophage functions—including phagocytosis, cytokine production, and immune activation. Beyond immune regulation, MIF is also involved in modulating cell proliferation, apoptosis, and autophagy. Clinically, it has been implicated in the pathogenesis of multiple diseases, such as sepsis, autoimmune disorders, and various malignancies. Mechanistically, MIF binds to Cluster Of Differentiation 74 (CD74)—the invariant chain of major histocompatibility complex (MHC) class II complexes—with high affinity. As MIF's primary high-affinity receptor, CD74 mediates the initiation of pro-inflammatory signaling pathways downstream of MIF binding. To detect the activity of recombinant MIF, a functional ELISA assay was performed to evaluate the interaction between recombinant human MIF and recombinant rat CD74. Briefly, biotin-linked MIF were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100µl were then transferred to CD74-coated microtiter wells and incubated for 1h at 37 °C. Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 °C. Finally, add 50µl stop solution to the wells and read at 450nm immediately. The binding activity of MIF and CD74 was shown in Figure 1, the EC50 for this effect is 0.16µg/mL.

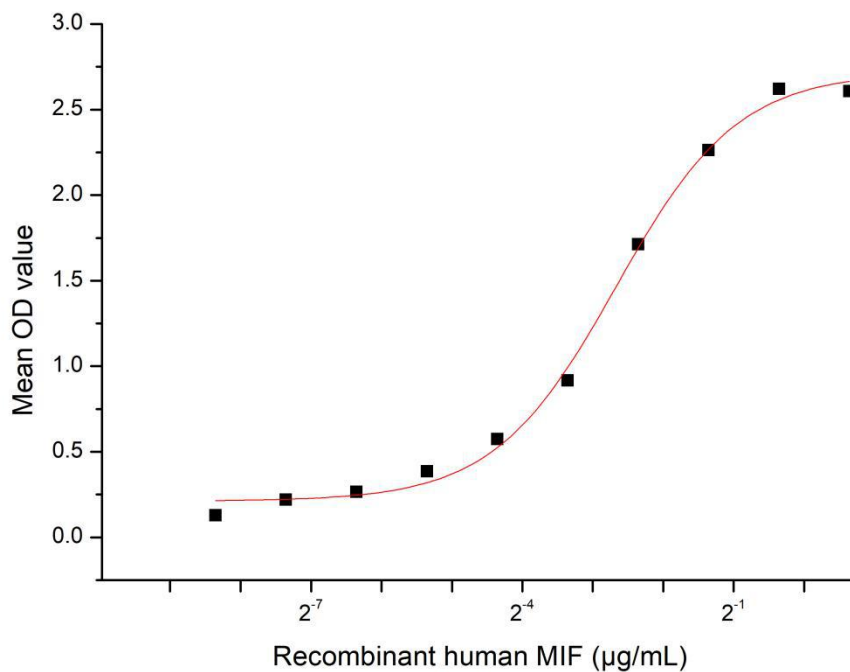


Figure 1. The binding activity of recombinant human MIF and recombinant rat CD74

[IDENTIFICATION]

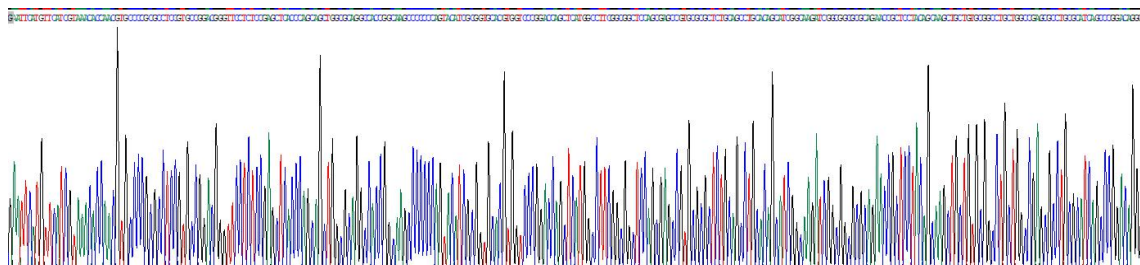


Figure 2. Gene Sequencing (extract)

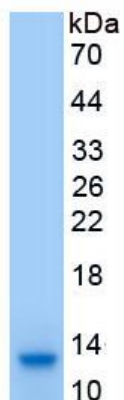


Figure 3. SDS-PAGE

Sample: Active recombinant MIF, Human

[IMPORTANT NOTE]

The kit is designed for research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.