APA090Hu63 100μg
Active Colony Stimulating Factor 1, Macrophage (MCSF)
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: Glu33~Arg255
Tags: N-terminal His Tag and C-terminal Fc Region of Human IgG1
Purity: >95%
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: 4.6
Predicted Molecular Mass: 56.1kDa
Accurate Molecular Mass: 68kDa as determined by SDS-PAGE reducing conditions.
Phenomenon explanation:
The possible reasons that the actual band size differs from the predicted are as follows:

1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[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]

EEVSEYCSHMIGSGHLQSLQRLIDSQMETSCQITFEFVDQEQLKDPVCYLKKAFLLVQDI
MEDTMRFRDNTPNAIAIVQLQELSLRLKSCFTKDYEEHDKACVRTFYETPLQLLEKVKNV
FNETKNLLDKDWNIFSKNCNNSFAECSSQDVVTKPDCNCLYPKAIPSSDPASVSPHQPLAP
SMAPVAGLTWEDSEGTEGSSLLPGEQPLHTVDPGSAKQRPPR

[ACTIVITY]

M-CSF (Macrophage Colony-Stimulating Factor), encoded by the CSF1 gene in humans, is a crucial cytokine that regulates the survival, proliferation, and differentiation of mononuclear phagocytes, including macrophages and their precursors. It binds to its receptor, CSF1R, activating signaling pathways essential for innate immunity, tissue homeostasis, and bone remodeling. M-CSF also plays roles in inflammatory diseases and cancer, where it can promote tumor-associated macrophage infiltration, supporting tumor progression. Its functions extend beyond hematopoiesis to include roles in metabolic regulation and neural development, making it a therapeutic target for conditions like autoimmune disorders and certain cancers.Besides,IL34 has been identified as an interactor of MCSF, thus a functional binding ELISA assay was conducted to detect the interaction of

recombinant human MCSF and recombinant human IL34.Briefly, biotin-linked MCSF were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100μl were then transferred to IL34-coated microtiter wells and incubated for 1h at 37℃. 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℃. Finally, add 50μl stop solution to the wells and read at 450nm immediately. The binding activity of MCSF and IL34 was shown in Figure 1, the EC50 for this effect is 0.09587μg/mL.

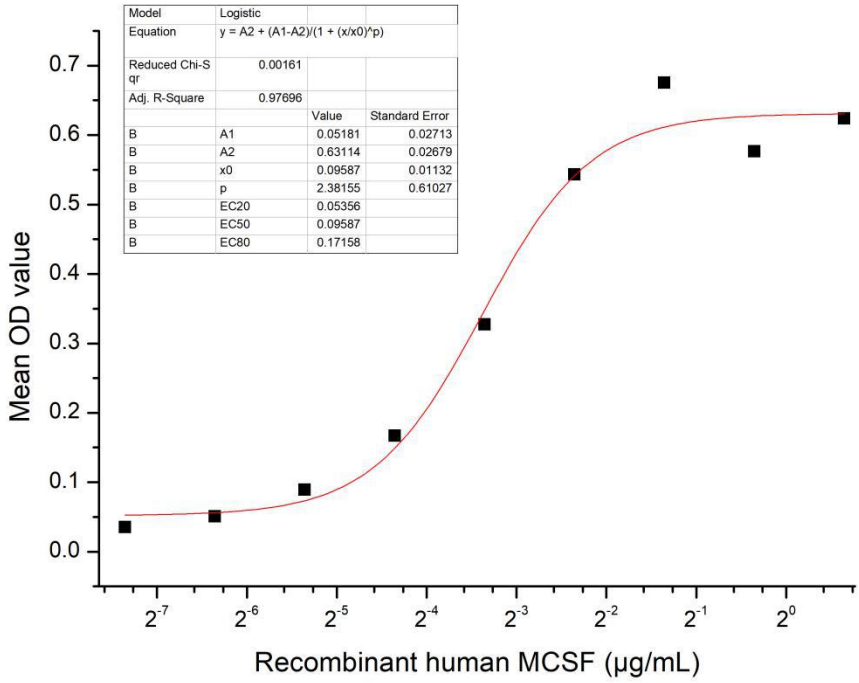

Figure 1. The binding activity of MCSF and IL34

[IDENTIFICATION]

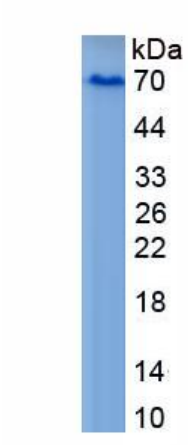

Figure 2. SDS-PAGE

Sample: Active recombinant MCSF, 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.