APA780Bo02 100μg
Active Lactoferrin (LTF)
Organism Species: *Bos taurus; Bovine (Cattle)*
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.
Host: *E. coli*
Residues: Val25~Glu352
Tags: N-terminal His-tag
Purity: >90%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% Sarcosyl, 5%Trehalose .
Original Concentration: 200μg/mL
Applications: Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 9.2
Predicted Molecular Mass: 40.4kDa
Accurate Molecular Mass: 40kDa 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 2-8ºC for one month.
Aliquot and store at -80ºC 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 37ºC 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]

VRWCTI SQPEWFKCRR WQWRMKKLGA PSITCVRRAF
ALECIRAIAE KKADAVTLDG GMVFEAGRDP YKLRPVAAEI YGTKESPQTH YYAVAVVKKG
SNFQLDQLQG RKSCHTGLGR SAGWIIPMGI LRPYLSWTES LEPLQGAVAK FFSASCVPCI
DRQAYPNLCQ LCKGEGENQC ACSSREPYFG YSGAFKCLQD GAGDVAFVKE TTVFENLPEK
ADRDQYELLC LNNSRAPVDA FKECHLAQVP SHAVVARSVD GKEDLIWKLL SKAQEKFGKN
KSRSFQLFGS PPGQRDLLFK DSALGFLRIP SKVDSALYLG SRYLTTLKNL RE

[ACTIVITY]

Lactoferrin (LTF), a member of the transferrin family of iron-binding glycoproteins, is a multifunctional protein predominantly secreted by exocrine glands and immune cells. It exerts potent iron-sequestering activity to deprive pathogens of essential iron, mediating broad-spectrum antimicrobial effects. Beyond innate immunity, LTF exhibits robust antiproliferative and proapoptotic properties in malignant cells: it modulates cell cycle checkpoints to arrest proliferation and activates caspase-dependent apoptotic signaling pathways, inducing programmed cell death in cancer cells. Additionally, LTF regulates immune responses and anti-inflammatory processes, making it a promising candidate for anticancer and antimicrobial therapeutic development. To test the effect of LTF on cell apoptosis, HCT116 cells were seeded into triplicate wells of 96-well plates at a density of 4,000 cells/well and allowed to attach overnight, then the medium was replaced with various concentrations of recombinant bovine LTF diluted with 5% serum standard DMEM. After incubated for 72h, 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 450 nm was measured using a microplate reader after incubating

the plate for 1-4 hours at 37 ℃. Cell viability was assessed by CCK-8 (Cell Counting Kit-8) assay after incubation with recombinant bovine LTF for 72h. The result was shown in Figure 1. It was obvious that LTF significantly decreased cell viability of HCT116 cells. The ED50 of recombinant bovine LTF is 2.91 μg/ml.

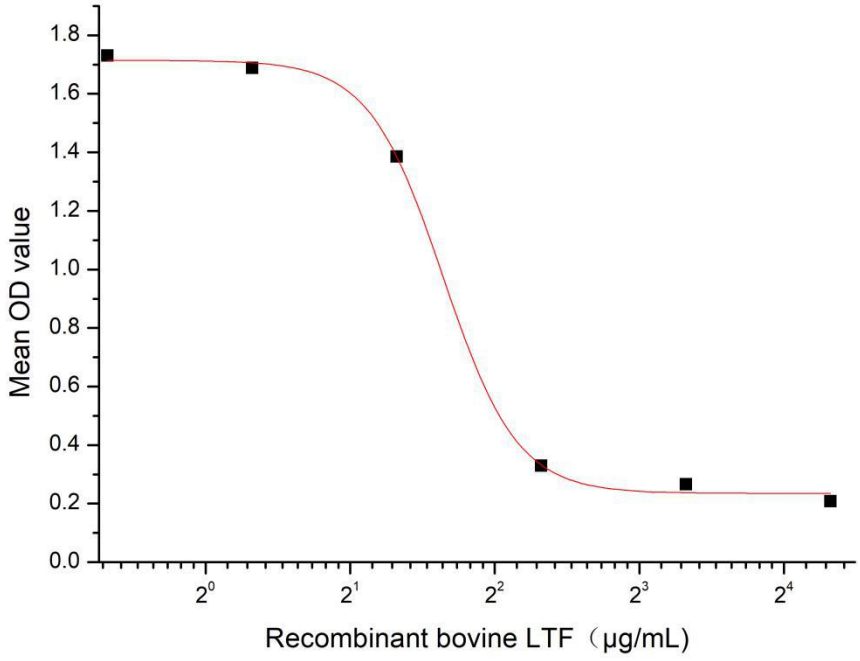

Figure 1. Inhibition of HCT116 cells proliferation after stimulated with recombinant bovine LTF

[IDENTIFICATION]

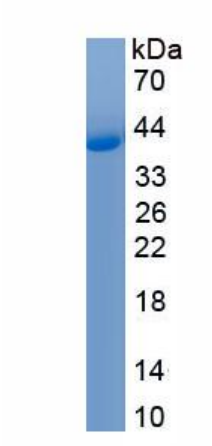

Figure 2. SDS-PAGE

Sample: Active recombinant LTF, Cattle

[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.