

APA780Hu01 100µg

Active Lactoferrin (LTF)

Organism Species: *Homo sapiens* (Human)

Instruction manual

FOR RESEARCH USE ONLY

NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

1st Edition (Apr, 2016)

[PROPERTIES]

Source: Natural Extract

Host: Human (Breast)

Purity: >98%

Purification Methods: Salt co-precipitation and ionic-Exchange chromatography.

Traits: Freeze-dried powder

Buffer Formulation: PBS, pH7.4, containing 1mM DTT, 5% Trehalose and Proclin300.

Original Concentration: 200µg/mL

Applications: Positive Control; Immunogen; SDS-PAGE; WB.

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

Observe Molecular Mass: 80kDa

[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.

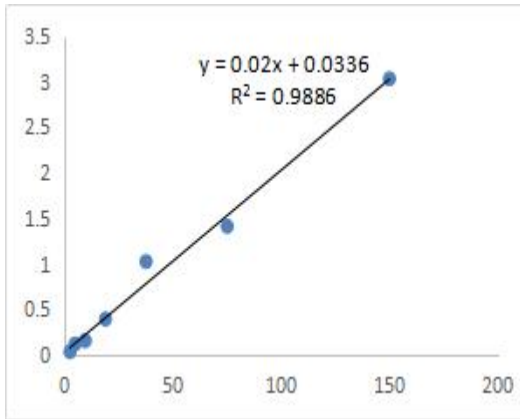
Stability Test: The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the

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.

[ACTIVITY]

Lactoferrin (LF), also known as lactotransferrin (LTF), is a multifunctional protein of the transferrin family. Lactoferrin is one of the components of the immune system of the body; it has antimicrobial activity (bactericide, fungicide) and is part of the innate defense, mainly at mucoses. In particular, lactoferrin provides antibacterial activity to human infants. Lactoferrin interacts with DNA and RNA, polysaccharides and heparin, and shows some of its biological functions in complexes with these ligands. LTF is known to activate immune cells to produce several cytokines, such as tumor necrosis factor TNF- α , thus, a stimulation assay was conducted to detect the activity of LTF using human monocytic cell line THP-1. Briefly, THP-1 cells were seeded into wells of 24-well plates at a density of 5×10^6 cells/mL in RPMI-1640 with the addition of various concentrations of recombinant human LTF. After incubation for 20 hours, the concentration of TNF- α in the cell supernatant was detected using an ELISA kit. TNF- α levels in the cell supernatant of spleen cells increased significantly after stimulated with LTF, the data was shown in table 1.

Sample (cell supernatant of THP1 cells)	O.D. value	Corrected	Concentration of TNF-α (ng/mL)
Stimulated with rh LTF (1000ng/mL)	0.735	0.668	31.72
Stimulated with rh LTF (100ng/mL)	0.428	0.415	19.07
Stimulated with rh LTF (10ng/mL)	0.288	0.221	9.37
Unstimulated	0.225	0.158	6.22



Concentration of TNF-a (ng/mL)

STD (ng/mL)	O.D. value	Corrected
150	3.102	3.035
75	1.470	1.413
37.5	1.093	1.026
18.75	0.461	0.394
9.375	0.224	0.157
4.6875	0.187	0.12
2.34375	0.103	0.036

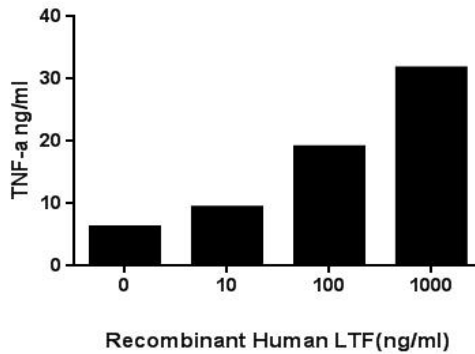


Figure 1. TNF-a concentration in the cell supernatant of THP-1 cells up-regulated by LTF.

[IDENTIFICATION]

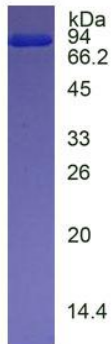


Figure 2. SDS-PAGE

Sample: Active recombinant LTF, Human

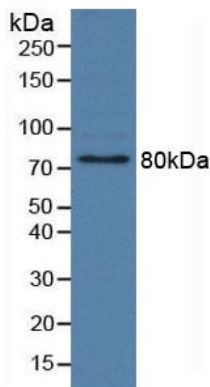


Figure 3. Western Blot

Sample: Recombinant LTF, Human;

Antibody: Rabbit Anti-Human LTF Ab (PAA780Hu01)

[IMPORTANT NOTE]

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