

# lactoferrin (1A1): sc-52048

## BACKGROUND

Ferritin and transferrins manage necessary iron-binding functions for iron metabolism. Transferrins comprise a class of single-chain, two-sited, metal-binding proteins expressed throughout the fluid and cells of vertebrates. The three major types of transferrin include serotransferrin, lactotransferrin (lactoferrin), and ovotransferrin. Lactoferrin is found in milk, tears, and leukocytes. Lactoferrin degrades an IgA1 protease secreted by *Haemophilus influenzae* and, consequently, allows the human IgA1 antibody to effectively abolish *H. influenzae* colonization. Lactoferrin also attenuates the pathogenic potential of *H. influenzae* by proteolytic degradation of the Hap adhesin. While lactoferrin may aid in the transmission of human T cell leukemia virus type 1, lactoferrin inhibits HIV-1 replication at the level of viral fusion and entry into cells. The inhibitory effects of lactoferrin on mixed lymphocyte reactions suggest that lactoferrin may have the ability to sense the activation status of lymphocytes. The gene encoding human lactoferrin maps to chromosome 3p21.31.

## REFERENCES

1. Aisen, P. and Listowsky, I. 1980. Iron transport and storage proteins. *Annu. Rev. Biochem.* 49: 357-393.
2. Teng, C.T., et al. 1987. Assignment of the lactotransferrin gene to human chromosome 3 and to mouse chromosome 9. *Somat. Cell Mol. Genet.* 13: 689-693.
3. Zimecki, M., et al. 2001. Lactoferrin regulates proliferative response of human peripheral blood mononuclear cells to phytohemagglutinin and mixed lymphocyte reaction. *Arch. Immunol. Ther. Exp.* 49: 147-154.
4. Nibbering, P.H., et al. 2001. Human lactoferrin and peptides derived from its N terminus are highly effective against infections with antibiotic-resistant bacteria. *Infect. Immun.* 69: 1469-1476.
5. Moriuchi, M. and Moriuchi, H. 2001. A milk protein lactoferrin enhances human T cell leukemia virus type 1 and suppresses HIV-1 infection. *J. Immunol.* 166: 4231-4236.
6. Zimecki, M., et al. 2001. Lactoferrin regulates proliferative response of human peripheral blood mononuclear cells to phytohemagglutinin and mixed lymphocyte reaction. *Arch. Immunol. Ther. Exp.* 49: 147-154.

## CHROMOSOMAL LOCATION

Genetic locus: LTF (human) mapping to 3p21.31.

## SOURCE

lactoferrin (1A1) is a mouse monoclonal antibody raised against purified lactoferrin from milk of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

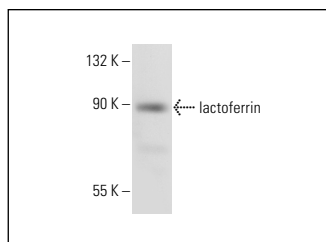
lactoferrin (1A1) is recommended for detection of lactoferrin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for lactoferrin siRNA (h): sc-41371, lactoferrin shRNA Plasmid (h): sc-41371-SH and lactoferrin shRNA (h) Lentiviral Particles: sc-41371-V.

Molecular Weight of lactoferrin: 78 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human PBL whole cell lysate.

## DATA



lactoferrin (1A1): sc-52048. Western blot analysis of lactoferrin expression in human PBL whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Jin, H., et al. 2013. Oxidatively modified proteins as plasma biomarkers in breast cancer. *Cancer Biomark.* 13: 193-200.
2. Au-Yeung, C.L., et al. 2020. ITLN1 modulates invasive potential and metabolic reprogramming of ovarian cancer cells in omental microenvironment. *Nat. Commun.* 11: 3546.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.