

NGAL (M-12): sc-18698

BACKGROUND

In addition to the monomeric mammalian progelatinase, two additional forms of progelatinase have been identified. The shorter of these additional forms is a covalently linked, disulfide-bridged protein that heterodimerizes with a short protein; an α -2-Microglobulin-related protein known as neutrophil gelatinase-associated lipocalin (NGAL), which is moderately expressed in breast and lung tissues. NGAL belongs to the lipocalin family and has a high degree of similarity with rat α -2-Microglobulin-related protein and mouse protein 24p3. NGAL is able to bind a derivative of the bacterial chemotactic peptide, suggesting that it has important immunomodulatory functions. NGAL has been described as an inflammatory protein; it is released into the circulation as a result of the inflammatory activation of leukocytes initiated by the extra-corporeal circulation. In addition, NGAL synthesis is induced in epithelial cells in inflammatory and neoplastic colorectal diseases. In conclusion, NGAL may serve as a scavenger of bacterial products to function in the anti-inflammatory process.

REFERENCES

1. Triebel, S., et al. 1992. A 25 kDa α -2-Microglobulin-related protein is a component of the 125 kDa form of human gelatinase. *FEBS Lett.* 314: 386-388.
2. Kjeldsen, L., et al. 1993. Isolation and primary structure of NGAL, a novel protein associated with human neutrophil gelatinase. *J. Biol. Chem.* 268: 10425-10432.
3. Bundgaard, J.R., et al. 1994. Molecular cloning and expression of a cDNA encoding NGAL: a lipocalin expressed in human neutrophils. *Biochem. Biophys. Res. Comm.* 202: 1468-1475.
4. Nielsen, B.S., et al. 1996. Induction of NGAL synthesis in epithelial cells of human colorectal neoplasia and inflammatory bowel diseases. *Gut* 38: 414-420.
5. Stoesz, S.P., et al. 1998. Heterogeneous expression of the lipocalin NGAL in primary breast cancers. *Int. J. Cancer* 79: 565-572.
6. Jonsson, P., et al. 1999. Extracorporeal circulation causes release of neutrophil gelatinase-associated lipocalin (NGAL). *Mediators Inflamm.* 8: 169-171.

CHROMOSOMAL LOCATION

Genetic locus: Lcn2 (mouse) mapping to 2 B.

SOURCE

NGAL (M-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of NGAL of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18698 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NGAL (M-12) is recommended for detection of NGAL of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NGAL siRNA (m): sc-60044, NGAL shRNA Plasmid (m): sc-60044-SH and NGAL shRNA (m) Lentiviral Particles: sc-60044-V.

Molecular Weight of NGAL: 23 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kamezaki, K., et al. 2003. The lipocalin 24p3, which is an essential molecule in IL-3 withdrawal-induced apoptosis, is not involved in the G-CSF withdrawal-induced apoptosis. *Eur. J. Haematol.* 71: 412-417.
2. Bu, D.X., et al. 2006. Induction of neutrophil gelatinase-associated lipocalin in vascular injury via activation of nuclear factor κ B. *Am. J. Pathol.* 169: 2245-2253.
3. Hemdah, A.L., et al. 2006. Expression of neutrophil gelatinase-associated lipocalin in atherosclerosis and myocardial infarction. *Arterioscler. Thromb. Vasc. Biol.* 26: 136-142.
4. Roudkenar, M.H., et al. 2009. Lipocalin 2 regulation by thermal stresses: protective role of Lcn2/NGAL against cold and heat stresses. *Exp. Cell Res.* 315: 3140-3151.
5. Dittrich, A.M., et al. 2010. Lipocalin2 protects against airway inflammation and hyperresponsiveness in a murine model of allergic airway disease. *Clin. Exp. Allergy* 40: 1689-1700.
6. Dai, B., et al. 2012. A comparative transcriptome analysis identifying FGF23 regulated genes in the kidney of a mouse CKD model. *PLoS ONE* 7: e44161.

STORAGE

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

RESEARCH USE

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