

Rat LCN2 / NGAL Protein (His Tag)

Catalog Number: 80058-R08B



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

LCN2

Protein Construction:

A DNA sequence encoding the rat LCN2 (P30152) (Met 1-Asn 198) was fused with a polyhistidine tag at the C-terminus.

Source: Rat

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 90 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to bind Iron(III) dihydroxybenzoic acid [Fe(DHBA)3]. The binding of Fe(DHBA)3 results in the quenching of Trp fluorescence in Lipocalin2. It binds >1.0 μ M of Fe(DHBA)3.

Endotoxin:

< 1.0 EU per μ g of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Gln 21

Molecular Mass:

The recombinant rat LCN2 comprises 188 amino acids with and has a predicted molecular mass of 21.9 kDa. It migrates as an approximately 25 kDa band in reduced SDS-PAGE.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, 10% glycerol, pH 7.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

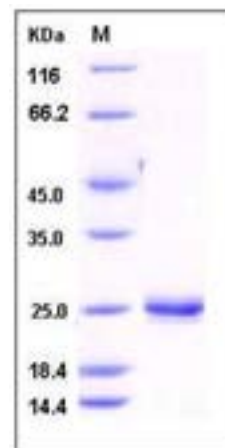
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Lipocalin-2 (LCN2), also known as neutrophil gelatinase-associated lipocalin (NGAL), is a 25 kDa protein belonging to the lipocalin superfamily. It was initially found in activated neutrophils, however, many other cells, like kidney tubular cells, may produce NGAL in response to various insults. This protein is released from injured tubular cells after various damaging stimuli, is already known by nephrologists as one of the most promising biomarkers of incoming Acute Kidney Injury (AKI). Recent evidence also suggests its role as a biomarker in a variety of other renal and non-renal conditions. Moreover, recent studies seem to suggest a potential involvement of this factor also in the genesis and progression of chronic kidney diseases. NGAL is the first known mammalian protein which specifically binds organic molecules called siderophores, which are high-affinity iron chelators. NGAL, first known as an antibacterial factor of natural immunity, and an acute phase protein, is currently one of the most interesting and enigmatic proteins involved in the process of tumor development. acting as an intracellular iron carrier and protecting MMP9 from proteolytic degradation, NGAL has a clear pro-tumoral effect, as has already been observed in different tumors (e.g. breast, stomach, oesophagus, brain) in humans. In thyroid carcinomas, NGAL is strongly induced by NF- κ B, an important factor involved both in tumor growth and in the link between chronic inflammation and neoplastic development. Thus, Lipocalin-2 (LCN2/NGAL) has been implicated in a variety of processes including cell differentiation, proliferation, survival and morphogenesis.

References

1. Schmidt-Ott KM, *et al.* (2006) Neutrophil gelatinase-associated lipocalin-mediated iron traffic in kidney epithelia. *Curr Opin Nephrol Hypertens.* 15(4): 442-9.
2. Bolignano D, *et al.* (2010) Neutrophil gelatinase-associated lipocalin (NGAL) in human neoplasias: a new protein enters the scene. *Cancer Lett.* 288(1): 10-6.
3. Soni SS, *et al.* (2010) NGAL: a biomarker of acute kidney injury and other systemic conditions. *Int Urol Nephrol.* 42(1): 141-50.

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