

Lipocalin-2/NGAL Protein, Rat (sf9, His)

Cat. No.:	HY-P74774
Synonyms:	Neutrophil gelatinase-associated lipocalin; NGAL; Lipocalin 24p3; p25; LCN2
Species:	Rat
Source:	Sf9 insect cells
Accession:	P30152 (M1-N198)
Gene ID:	170496
Molecular Weight:	Approximately 25 kDa

PROPERTIES

Biological 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.
Appearance	Solution
Formulation	Supplied as a 0.2 μ m filtered solution of 20 mM Tris, 500 mM NaCl, 10% Glycerol, pH 7.0.
Endotoxin Level	<1 EU/ μ g, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

DESCRIPTION

Background	Lipocalin-2/NGAL, a multifaceted iron-trafficking protein, participates in diverse biological processes including apoptosis, innate immunity, and renal development. Through its association with the siderophore 2,3-dihydroxybenzoic acid (2,3-DHBA), Lipocalin-2 binds and shuttles iron, dynamically influencing cellular iron concentrations based on the holo-24p3 (iron-bound) or apo-24p3 (iron-free) forms. The interaction with the SLC22A17 receptor mediates iron release or chelation, finely regulating intracellular iron levels. In apoptosis triggered by interleukin-3 (IL3) deprivation, the iron-loaded form prevents apoptosis, while the iron-free form induces BCL2L11/BIM expression, leading to programmed cell death. Lipocalin-2 also contributes to innate immunity by sequestering bacterial siderophores, such as enterobactin, and exhibits the ability to bind siderophores from <i>M. tuberculosis</i> . Structurally, Lipocalin-2 exists as a monomer, homodimer (disulfide-linked), and forms a heterodimer (disulfide-linked) with MMP9. These diverse interactions underscore the versatility of Lipocalin-2 in orchestrating critical cellular and immune responses.
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Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA