Active Neutrophil gelatinase-associated lipocalin (NGAL)

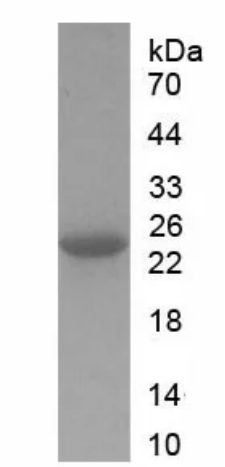
Catalog#:PEH12664

概述（Summary）

别称（Alternative Names）	Lipocalin-2; LCN2; p25; Lipocalin 2; Oncogene 24p3; 25 kDa alpha-2-microglobulin-related subunit of MMP-9; Siderocalin LCN2
纯度（Purity）	Greater than 90% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Gln21-Gly198】
Accession #	P80188
表达宿主（Host）	E.coli
种属（Species）	Homo sapiens (Human)
预测分子量（Predicted MW）	24.2 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	Iron-trafficking protein involved in multiple processes such as apoptosis, innate immunity and renal development. Binds iron through association with 2,3-dihydroxybenzoic acid (2,3-DHBA), a siderophore that shares structural similarities with bacterial enterobactin, and delivers or removes iron from the cell, depending on the context. Iron-bound form (holo-24p3) is internalized following binding to the SLC22A17 (24p3R) receptor, leading to release of iron and subsequent increase of intracellular iron concentration. In contrast, association of the iron-free form (apo-24p3) with the SLC22A17 (24p3R) receptor is followed by

association with an intracellular siderophore, iron chelation and iron transfer to the extracellular medium, thereby reducing intracellular iron concentration. Involved in apoptosis due to interleukin-3 (IL3) deprivation: iron-loaded form increases intracellular iron concentration without promoting apoptosis, while iron-free form decreases intracellular iron levels, inducing expression of the proapoptotic protein BCL2L11/BIM, resulting in apoptosis. Involved in innate immunity; limits bacterial proliferation by sequestering iron bound to microbial siderophores, such as enterobactin. Can also bind siderophores from M.tuberculosis.

电泳图（SDS-PAGE image）



Greater than 90% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

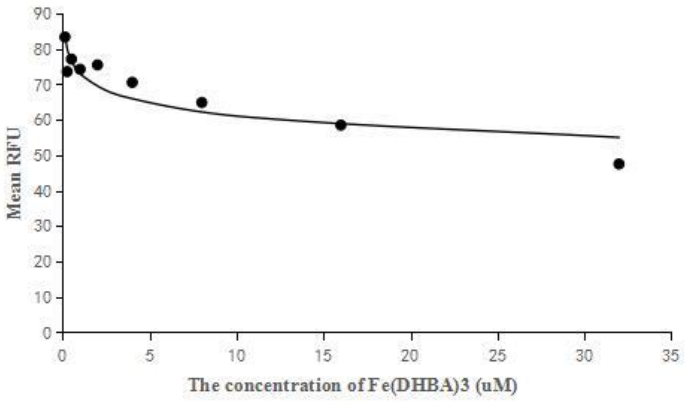


Figure 1. The binding activity of NGAL with $Fe(DHBA)_3$

Lipocalin-2, also known as Neutrophil Gelatinase-Associated Lipocalin (NGAL), was originally identified as a component of neutrophil granules. It is a 25 kDa protein existing in monomeric and homo- and heterodimeric forms, the latter as a dimer with

human neutrophil gelatinases (MMP-9). Its expression has been observed in most tissues normally exposed to microorganism, and its synthesis is induced in epithelial cells during inflammation. Lipocalin-2 has been implicated in a variety of processes including cell differentiation, tumorigenesis, and apoptosis. Studies indicate that Lipocalin-2 binds a bacterial catecholate sidropore bound to ferric ion such as enterobactin with a subnanomolar dissociation constant (Kd = 0.41 nM). The bound ferric enterobactin complex breaks down slowly in a month into dihydroxybenzoyl serine and dihydroxybenzoic acid (DHBA). It also binds to a ferric DHBA complex with much less Kd values (7.9 nM). The activity assay of recombinant human NGAL was 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 Lipocalin-2. The recombinant human NGAL was diluted to 100 ug/ml in assay buffer (50 mM Tris, 10 mM CaCl2, 150 mM NaCl, pH 7.5). 50 µL of the different concentrations of Fe(DHBA)3 and 50 µL of 100 ug/ml rmNGAL was loaded into the plate. Incubated at room temperature for 30 minutes, then read at excitation and emission wavelengths of 280 nM and 340 nM in endpoint mode. The result was shown in Figure 1, the recombinant human Lipocalin-2 can bind >8 µM of Fe(DHBA)3.

注意事项（Note）

For Research Use Only , Not for Diagnostic Use.