Datasheet for ABIN411403

Lipocalin 2 ELISA Kit

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Overview

Quantity:	96 tests
Target:	Lipocalin 2 (LCN2)
Binding Specificity:	AA 21-198
Reactivity:	Rat
Method Type:	Sandwich ELISA
Detection Range:	78-5000 pg/mL
Minimum Detection Limit:	78 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Rat Lipocalin-2/NGAL
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin), Urine
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: Q21-N198
Specificity:	Expression system for standard: NSO Immunogen sequence: Q21-N198
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.

Product Details

Sensitivity:	<10pg/mL
Material not included:	Microplate reader in standard size. Automated plate washer. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection. Clean tubes and Eppendorf tubes. Washing buffer (neutral PBS or TBS). Preparation of 0.01M TBS: Add 1.2g Tris, 8.5g Nacl

Target Details

Target:	Lipocalin 2 (LCN2)
Alternative Name:	LCN2 (LCN2 Products)
Background:	Protein Function: Iron-trafficking protein involved in multiple processes such as apoptosis, innate immunity and renal development. Binds iron through association with 2,5-dihydroxybenzoic acid (2,5- 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, possibly by sequestrating iron, leading to limit bacterial growth (By similarity). . Background: Lipocalin-2(LCN2), also known as NGAL, is a protein associated with neutrophil gelatinase.1 The LCN2 gene is located at 9q34 and contains 7 exons.2 The 25-kD LCN2 protein is believed to bind small lipophilic substances such as bacteria-derived lipopolysaccharide(LPS) and formylpeptides and may function as a modulator of inflammation. NGAL tightly binds bacterial catecholate-type ferric siderophores through a cyclically permuted, hybrid electrostatic/cation-pi interaction and is a potent bacteriostatic agent in iron-limiting conditions.3 The primary LCN2 transcript is 3,696 nucleotides long, and the processed transcript is 809 nucleotides long.4 LCN2 expression in adult bone marrow, uterus, prostate, salivary gland, stomach, appendix, colon, trachea, and lung, and in fetal spleen and lung. The standard product used in this kit is recombinant rat NGAL, consisting of 177 amino acids with the molecular mass of 21 kDa. Synonyms: Neutrophil gelatinase-associated lipocalin,NGAL,Alpha-2-microglobulin-related

Target Details

	protein,Alpha-2U globulin-related protein,Lipocalin-2,Siderocalin LCN2,p25,Lcn2, Full Gene Name: Neutrophil gelatinase-associated lipocalin Cellular Localisation: Secreted . Upon binding to the SLC22A17 (24p3R) receptor, it is internalized..
Gene ID:	170496
UniProt:	P30152
Pathways:	Cellular Response to Molecule of Bacterial Origin, Transition Metal Ion Homeostasis

Application Details

Application Notes:	Before using Kit, spin tubes and bring down all components to bottom of tube. Duplicate well assay was recommended for both standard and sample testing.
Plate:	Pre-coated
Protocol:	rat NGAL ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for NGAL has been precoated onto 96-well plates. Standards(NSO, Q21-N198) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for NGAL is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the rat NGAL amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 5000pg/mL, 2500pg/mL, 1250pg/mL, 625pg/mL, 313pg/mL, 156pg/mL, 78pg/mL rat NGAL standard solutions into the precoated 96-well plate. Add 0.1 mL of the sample diluent buffer into the control well (Zero well). Add 0.1 mL of each properly diluted sample of rat cell culture supernates, serum, plasma(heparin) or urine to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each rat NGAL standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 422, Standard deviation: 18.99, CV(%): 4.5 • Sample 2: n=16, Mean(pg/ml): 1667, Standard deviation: 86.7, CV(%): 5.2 • Sample 3: n=16, Mean(pg/ml): 2922, Standard deviation: 163.6, CV(%): 5.6, • Sample 1: n=24, Mean(pg/ml): 638, Standard deviation: 38.92, CV(%): 6.1 • Sample 2: n=24, Mean(pg/ml): 1923, Standard deviation: 130.8, CV(%): 6.8 • Sample 3: n=24, Mean(pg/ml): 3125, Standard deviation: 231, CV(%): 7.4

Application Details

Restrictions:	For Research Use only

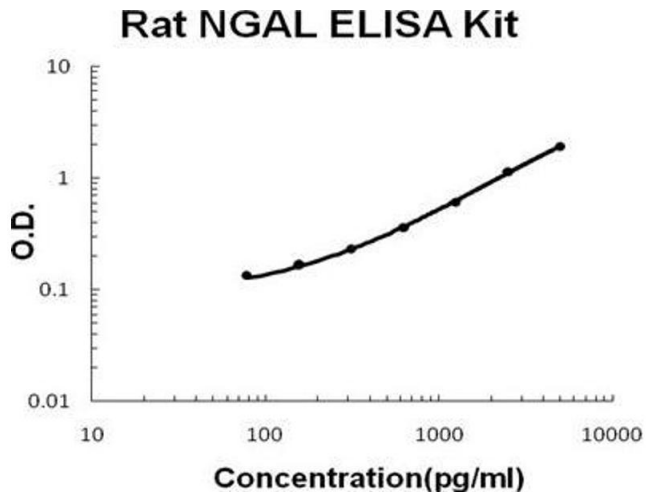
Handling

Handling Advice:	Avoid multiple freeze-thaw cycles.
Storage:	-20 °C,4 °C
Storage Comment:	Store at 4°C for 6 months, at -20°C for 12 months. Avoid multiple freeze-thaw cycles
Expiry Date:	12 months

Publications

Product cited in:	Kostrzewa-Nowak, Kubaszewska, Nowakowska, Nowak: "Effect of Aerobic and Anaerobic Exercise on the Complement System of Proteins in Healthy Young Males." in: **Journal of clinical medicine**, Vol. 9, Issue 8, (2020) (PubMed). Bhattad, Rawat, Gupta, Suri, Garg, de Boer, Kuijpers, Singh: "Early Complement Component Deficiency in a Single-Centre Cohort of Pediatric Onset Lupus." in: **Journal of clinical immunology**, Vol. 35, Issue 8, pp. 777-85, (2015) (PubMed). There are more publications referencing this product on: Product page

Images



ELISA

Image 1. Rat Lipocalin-2/NGAL PicoKine ELISA Kit standard curve