Datasheet for ABIN411402

Lipocalin 2 ELISA Kit

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Overview

Quantity:	96 tests
Target:	Lipocalin 2 (LCN2)
Binding Specificity:	AA 21-200
Reactivity:	Mouse
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 Mouse 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-N200
Specificity:	Expression system for standard: NSO Immunogen sequence: Q21-N200
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. . 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 mouse NGAL, consisting of 179 amino acids with the molecular mass of 22KDa. Synonyms: Neutrophil gelatinase-associated lipocalin,NGAL,Lipocalin-2,SV-40-induced 24P3

Target Details

	protein,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:	16819
UniProt:	P11672
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.
Comment:	Tissue Specificity: Detected in lung, spleen, uterus, vagina and epididymis. .
Plate:	Pre-coated
Protocol:	mouse NGAL ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from rat specific for NGAL has been precoated onto 96-well plates. Standards(NSO, Q21-N200) 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 mouse 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 mouse 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 mouse cell culture supernates, serum, plasma(heparin) or urine to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each mouse NGAL standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 527, Standard deviation: 35.84, CV(%): 6.8 • Sample 2: n=16, Mean(pg/ml): 1729, Standard deviation: 77.81, CV(%): 4.5 • Sample 3: n=16, Mean(pg/ml): 3028, Standard deviation: 148.4, CV(%): 4.9, • Sample 1: n=24, Mean(pg/ml): 722, Standard deviation: 53.43, CV(%): 7.4 • Sample 2: n=24, Mean(pg/ml): 2011, Standard deviation: 104.6, CV(%): 5.2

Application Details

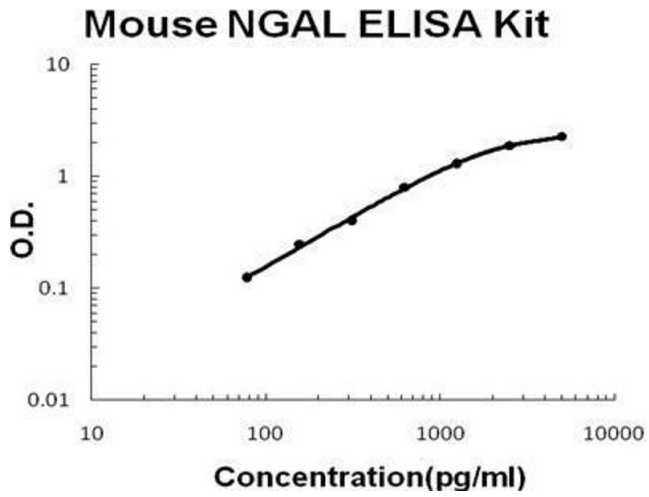
	• Sample 3: n=24, Mean(pg/ml): 3316, Standard deviation: 199, CV(%): 6
Restrictions:	For Research Use only

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:	Liu, Dong, Sun, Liu: "A novel fluid resuscitation protocol: provide more protection on acute kidney injury during septic shock in rats." in: **International journal of clinical and experimental medicine**, Vol. 7, Issue 4, pp. 919-26, (2014) (PubMed). Sun, Meng, Jiang, Liu, Lei, Su, Duan, Wu, Xia, Xia: "Protective effect of ginsenoside Rb1 against intestinal ischemia-reperfusion induced acute renal injury in mice." in: **PLoS ONE**, Vol. 8, Issue 12, pp. e80859, (2013) (PubMed). Koca, Olguner, Ergür, Altekin, Ta?dö?en, Duru, Girgin, Gündüz, Cilaker M?c?l?, Güzelda?, Akku?: " The effects of dexmedetomidine on secondary acute lung and kidney injuries in the rat model of intra-abdominal sepsis." in: **TheScientificWorldJournal**, Vol. 2013, pp. 292687, (2013) (PubMed). Olguner, Koca, Altekin, Ergür, Duru, Girgin, Ta?dö?en, Gündüz, Güzelda?, Akku?, Micili: "Ischemic preconditioning attenuates lipid peroxidation and apoptosis in the cecal ligation and puncture model of sepsis." in: **Experimental and therapeutic medicine**, Vol. 5, Issue 6, pp. 1581-1588, (2013) (PubMed).



ELISA

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