Datasheet for ABIN1672810

RAGE ELISA Kit

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Overview

Quantity:	96 tests
Target:	RAGE (AGER)
Binding Specificity:	AA 24-342
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 RAGE
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin), Plasma (EDTA)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: Q24-A342
Specificity:	Expression system for standard: NSO Immunogen sequence: Q24-A342
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:	RAGE (AGER)
Alternative Name:	AGER (AGER Products)
Background:	Protein Function: Mediates interactions of advanced glycosylation end products (AGE). These are nonenzymatically glycosylated proteins which accumulate in vascular tissue in aging and at an accelerated rate in diabetes. Acts as a mediator of both acute and chronic vascular inflammation in conditions such as atherosclerosis and in particular as a complication of diabetes. AGE/RAGE signaling plays an important role in regulating the production/expression of TNF- alpha, oxidative stress, and endothelial dysfunction in type 2 diabetes. Interaction with S100A12 on endothelium, mononuclear phagocytes, and lymphocytes triggers cellular activation, with generation of key proinflammatory mediators. Interaction with S100B after myocardial infarction may play a role in myocyte apoptosis by activating ERK1/2 and p53/TP53 signaling. Can also bind oligonucleotides. Receptor for amyloid beta peptide. Contributes to the translocation of amyloid-beta peptide (ABPP) across the cell membrane from the extracellular to the intracellular space in cortical neurons. ABPP-initiated RAGE signaling, especially stimulation of p38 mitogen-activated protein kinase (MAPK), has the capacity to drive a transport system delivering ABPP as a complex with RAGE to the intraneuronal space. RAGE-dependent signaling in microglia contributes to neuroinflammation, amyloid accumulation, and impaired learning/memory in a mouse model of Alzheimer disease. . Background: RAGE, the Receptor for Advanced Glycation Endproducts, is a 35kD transmembrane receptor of the immunoglobulin super family. It is also known as AGER. AGER gene is mapped to chromosome 6p21.3 by mapping by contiguous cosmids and YAC clones and by fluorescence in situ hybridization. The expression of RAGE is particularly increased in neurons close to deposits of amyloid beta peptide and to neurofibrillary tangles. RAGE has been linked to several chronic diseases, which are thought to result from vascular damage. The pathogenesis is hypothesized to include ligand binding upon which RAGE signals activation of the nuclear factor kappa B(NF-kappaB). Synonyms: Advanced glycosylation end product-specific receptor,Receptor for advanced

Target Details

	glycosylation end products,Ager,Rage, Full Gene Name: Advanced glycosylation end product-specific receptor Cellular Localisation: Membrane, Single-pass type I membrane protein.
Gene ID:	26448
UniProt:	Q62151
Pathways:	Carbohydrate Homeostasis, Toll-Like Receptors Cascades, Smooth Muscle Cell Migration, S100 Proteins

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:	Sequence similarities: Contains 2 Ig-like C2-type (immunoglobulin-like) domains. Tissue Specificity: Expressed at higher levels in the coronary arterioles in type 2 diabetic mice (at protein level). Endothelial cells. .
Plate:	Pre-coated
Protocol:	mouse RAGE ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from rat specific for RAGE has been precoated onto 96-well plates. Standards(NSO, Q24-A342) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for RAGE 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 RAGE amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 5000pg/mL, 2500pg/mL, 1250pg/mL, 625pg/mL, 312pg/mL, 156pg/mL, 78pg/mL mouse RAGE 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 supernatants, serum or plasma(heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. We recommend that each mouse RAGE standard solution and each sample is measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 702, Standard deviation: 47.74, CV(%): 6.8 • Sample 2: n=16, Mean(pg/ml): 1324, Standard deviation: 71.50, CV(%): 5.4

Application Details

- Sample 3: n=16, Mean(pg/ml): 2434, Standard deviation: 129, CV(%): 5.3,
- Sample 1: n=24, Mean(pg/ml): 862, Standard deviation: 69.9, CV(%): 8.1
- Sample 2: n=24, Mean(pg/ml): 1457, Standard deviation: 94.7, CV(%): 6.5
- Sample 3: n=24, Mean(pg/ml): 2611, Standard deviation: 183, CV(%): 7

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:

Song, Kong, Acosta, Sava, Borlongan, Sanchez-Ramos: "Granulocyte colony-stimulating factor promotes behavioral recovery in a mouse model of traumatic brain injury." in: **Journal of neuroscience research**, Vol. 94, Issue 5, pp. 409-23, (2016) (PubMed).

Banerjee, Nürnberger, Hennerbichler, Riedl, Schuh, Hacobian, Teuschl, Eibl, Redl, Wolbank: "In toto differentiation of human amniotic membrane towards the Schwann cell lineage." in: **Cell and tissue banking**, Vol. 15, Issue 2, pp. 227-39, (2014) (PubMed).

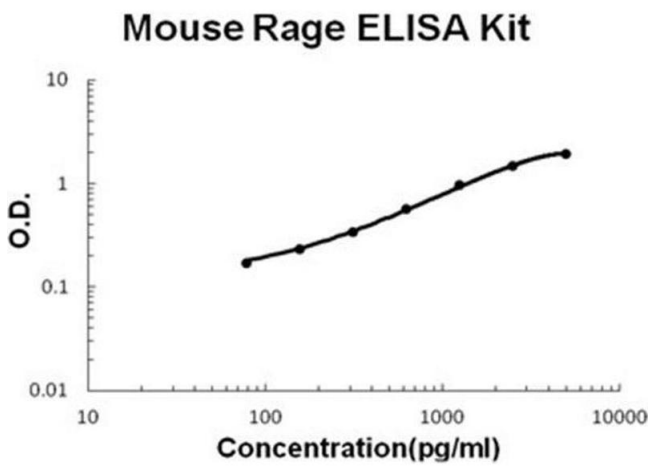
Liu, Wang, Shao, Liu: "Genetically modified Schwann cells producing glial cell line-derived neurotrophic factor inhibit neuronal apoptosis in rat spinal cord injury." in: **Molecular medicine reports**, Vol. 9, Issue 4, pp. 1305-12, (2014) (PubMed).

Chai, Guo, Li, Wang, Wang, Shi, Hu, Liu, Adah: "Scutellarin and caffeic acid ester fraction, active components of Dengzhanxixin injection, upregulate neurotrophins synthesis and release in hypoxia/reoxygenation rat astrocytes." in: **Journal of ethnopharmacology**, Vol. 150, Issue 1, pp. 100-7, (2013) (PubMed).

Yang, Zhou, Gao, Chen, Tu, Sun, Liu, He, Liu, Yuan: "Neuroprotective effects of bone marrow stem cells overexpressing glial cell line-derived neurotrophic factor on rats with intracerebral hemorrhage and neurons exposed to hypoxia/reoxygenation." in: **Neurosurgery**, Vol. 68, Issue 3 , pp. 691-704, (2011) (PubMed).

Publications

Images



ELISA

Image 1. Mouse RAGE PicoKine ELISA Kit standard curve