Datasheet for ABIN921109

TRKA ELISA Kit

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Overview

Quantity:	96 tests
Target:	TRKA (NTRK1)
Binding Specificity:	AA 33-418
Reactivity:	Rat
Method Type:	Sandwich ELISA
Detection Range:	156-10000 pg/mL
Minimum Detection Limit:	156 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Rat trkA
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Cell Lysate, Tissue Homogenate
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: A33-P418
Specificity:	Expression system for standard: NSO Immunogen sequence: A33-P418
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:	TRKA (NTRK1)
Alternative Name:	NTRK1 (NTRK1 Products)
Background:	Protein Function: Receptor tyrosine kinase involved in the development and the maturation of the central and peripheral nervous systems through regulation of proliferation, differentiation and survival of sympathetic and nervous neurons. High affinity receptor for NGF which is its primary ligand, it can also bind and be activated by NTF3/neurotrophin-3. However, NTF3 only supports axonal extension through NTRK1 but has no effect on neuron survival. Upon dimeric NGF ligand-binding, undergoes homodimerization, autophosphorylation and activation. Recruits, phosphorylates and/or activates several downstream effectors including SHC1, FRS2, SH2B1, SH2B2 and PLCG1 that regulate distinct overlapping signaling cascades driving cell survival and differentiation. Through SHC1 and FRS2 activates a GRB2-Ras-MAPK cascade that regulates cell differentiation and survival. Through PLCG1 controls NF-Kappa-B activation and the transcription of genes involved in cell survival. Through SHC1 and SH2B1 controls a Ras-PI3 kinase-AKT1 signaling cascade that is also regulating survival. In absence of ligand and activation, may promote cell death, making the survival of neurons dependent on trophic factors. . Background: Tropomyosin receptor kinase A(TrkA) are efficacious in attenuating skeletal pain.1 TrkA mutants were able to activate signaling cascades and were even more efficient in promoting neurite outgrowth than the wild-type receptor.2 TrkA is part of a sub-family of protein kinases which includes TrkB and TrkC. Also, there are other neurotrophic factors structurally related to NGF: BDNF(for Brain-Derived Neurotrophic Factor), NT-3(for Neurotrophin-3) and NT-4(for Neurotrophin-4). While TrkA mediates the effects of NGF, TrkB is bound and activated by BDNF, NT-4, and NT-3. Further, TrkC binds and is activated by NT-3.3 TrkA receptor was found in keratoconus-affected corneas, along with an increased level of repressor isoform of Sp3 transcription factor.4 The standard product used in this kit is extracellular part(A33-P418) of recombinant rat TRKA, consisting of 386 amino acids with the molecular weight of 69KDa.

Target Details

	Synonyms: High affinity nerve growth factor receptor,2.7.10.1,Neurotrophic tyrosine kinase receptor type 1,Slow nerve growth factor receptor,p140-TrkA,Trk-A,Ntrk1,Trk, Trka, Full Gene Name: High affinity nerve growth factor receptor Cellular Localisation: Cell membrane, Single-pass type I membrane protein . Early endosome membrane, Single-pass type I membrane protein. Late endosome membrane, Single-pass type I membrane protein. Internalized to endosomes upon binding of NGF or NTF3 and further transported to the cell body via a retrograde axonal transport. Localized at cell membrane and early endosomes before nerve growth factor (NGF) stimulation. Recruited to late endosomes after NGF stimulation. Colocalized with RAPGEF2 at late endosomes.
Gene ID:	59109
UniProt:	P35739
Pathways:	RTK Signaling, Neurotrophin Signaling Pathway, cAMP Metabolic Process

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: Belongs to the protein kinase superfamily. Tyr protein kinase family. Insulin receptor subfamily. Tissue Specificity: Isoform Trka-II is primarily expressed in neuronal cells, isoform Trka-I is found in non-neuronal tissues.
Plate:	Pre-coated
Protocol:	rat TrkA ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for TrkA has been precoated onto 96-well plates. Standards(NSO, A33-P418) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for TrkA 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 TrkA amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 10000pg/mL, 5000pg/mL, 2500pg/mL, 1250pg/mL, 625pg/mL, 312pg/mL, 156pg/mL rat TrkA 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

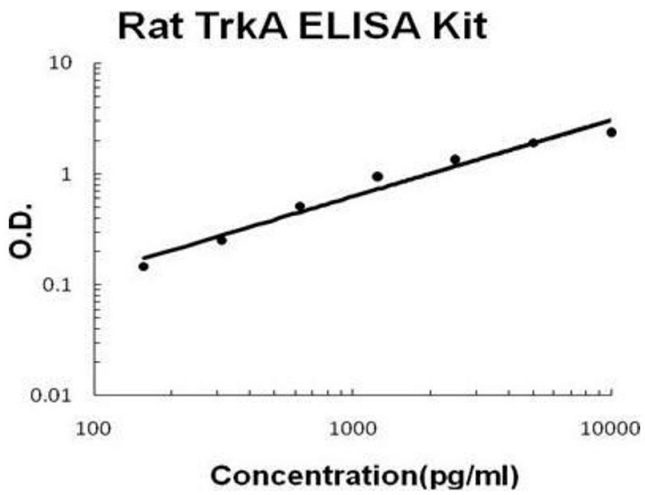
Application Details

	diluted sample of rat cell culture supernates, cell lysates or tissue lysates to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each rat TrkA standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 595, Standard deviation: 32.13, CV(%): 5.4 • Sample 2: n=16, Mean(pg/ml): 3622, Standard deviation: 166.6, CV(%): 4.6 • Sample 3: n=16, Mean(pg/ml): 6653, Standard deviation: 452.4, CV(%): 6.8, • Sample 1: n=24, Mean(pg/ml): 614, Standard deviation: 38.68, CV(%): 6.3 • Sample 2: n=24, Mean(pg/ml): 3125, Standard deviation: 162.5, CV(%): 5.2 • Sample 3: n=24, Mean(pg/ml): 7234, Standard deviation: 542.6, CV(%): 7.5
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

Images



ELISA

Image 1. Rat TrkA PicoKine ELISA Kit standard curve