Datasheet for ABIN411285

IGF1 ELISA Kit

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Overview

Quantity:	96 tests
Target:	IGF1
Binding Specificity:	AA 49-118
Reactivity:	Rat
Method Type:	Sandwich ELISA
Detection Range:	62.5-4000 pg/mL
Minimum Detection Limit:	62.5 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Rat IGF-1
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin), Plasma (EDTA)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: E.coli Immunogen sequence: G49-A118
Specificity:	Expression system for standard: E.coli Immunogen sequence: G49-A118
Cross-Reactivity (Details):	There is detectable cross-reactivity with IGF-2< 1 % .

Product Details

Predicted Reactivity:	Hamster
Sensitivity:	<5pg/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:	IGF1
Alternative Name:	IGF1 (IGF1 Products)
Background:	Protein Function: The insulin-like growth factors, isolated from plasma, are structurally and functionally related to insulin but have a much higher growth-promoting activity. May be a physiological regulator of [1-14C]-2-deoxy-D-glucose (2DG) transport and glycogen synthesis in osteoblasts. Stimulates glucose transport in rat bone-derived osteoblastic (PyMS) cells and is effective at much lower concentrations than insulin, not only regarding glycogen and DNA synthesis but also with regard to enhancing glucose uptake. May play a role in synapse maturation (By similarity). . Background: Insulin-like growth factor 1(IGF-1) that was once called somatomedin C, is a polypeptide protein hormone similar in molecular structure to insulin. It plays an important role in childhood growth and continues to have anabolic effects in adults. Human IGF1 is a single chain 70-amino acid polypeptide cross-linked by 3 disulfide bridges, with a calculated molecular mass of 7.6 kD. The IGF1 gene, mapped on 12q22-q24.1, contains 5 exons. Exons 1-4 encode the 195-amino acid precursor(IGF1B), and exons 1, 2, 3, and 5 encode the 153-residue peptide(IGF1A). The structure of IGF1 resembles that of IGF2. And the IGF1 and IGF2 genes have complex structures with multiple promoters. The expression of both genes is regulated at the levels of transcription, RNA processing, and translation. IGF-1 is produced primarily by the liver as an endocrine hormone as well as in target tissues in a paracrine/autocrine fashion. Moreover, approximately 98 % of IGF-1 is always bound to one of 6 binding proteins(IGF-BP). Furthermore, IGF-1 is one of the most potent natural activators of the AKT signaling pathway, a stimulator of cell growth and multiplication and a potent inhibitor of programmed cell death. Synonyms: Insulin-like growth factor I,IGF-I,Somatomedin,Igf1,Igf-1, Full Gene Name: Insulin-like growth factor I Cellular Localisation: Secreted.

Target Details

Gene ID:	24482
UniProt:	P08025
Pathways:	RTK Signaling, Intracellular Steroid Hormone Receptor Signaling Pathway, Peptide Hormone Metabolism, Hormone Activity, Regulation of Intracellular Steroid Hormone Receptor Signaling, Regulation of Hormone Metabolic Process, Regulation of Hormone Biosynthetic Process, Stem Cell Maintenance, Glycosaminoglycan Metabolic Process, Regulation of Carbohydrate Metabolic Process, Autophagy, Smooth Muscle Cell Migration, Activated T Cell Proliferation, Positive Regulation of fat Cell Differentiation

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 insulin family.
Plate:	Pre-coated
Protocol:	rat IGF-1 ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for IGF-1 has been precoated onto 96-well plates. Standards(E.coli, G49-A118) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for IGF-1is 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 IGF-1 amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 4000pg/mL, 2000pg/mL,1000pg/mL, 500pg/mL, 250pg/mL, 125pg/mL, 62.5pg/mL rat IGF-1 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 or plasma(heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each rat IGF-1 standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 527, Standard deviation: 32.67, CV(%): 6.2 • Sample 2: n=16, Mean(pg/ml): 1441, Standard deviation: 56.20, CV(%): 3.9 • Sample 3: n=16, Mean(pg/ml): 2641, Standard deviation: 140, CV(%): 5.3, • Sample 1: n=24, Mean(pg/ml): 497, Standard deviation: 41.25, CV(%): 8.3

Application Details

- Sample 2: n=24, Mean(pg/ml): 1532, Standard deviation: 82.73, CV(%): 5.4
- Sample 3: n=24, Mean(pg/ml): 2737, Standard deviation: 156, CV(%): 5.7

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:

Yang, Wu, Feng, Huang, Liu, Liu, Chen: "Vitamin C plus hydrogel facilitates bone marrow stromal cell-mediated endometrium regeneration in rats." in: **Stem cell research & therapy**, Vol. 8, Issue 1, pp. 267, (2017) (PubMed).

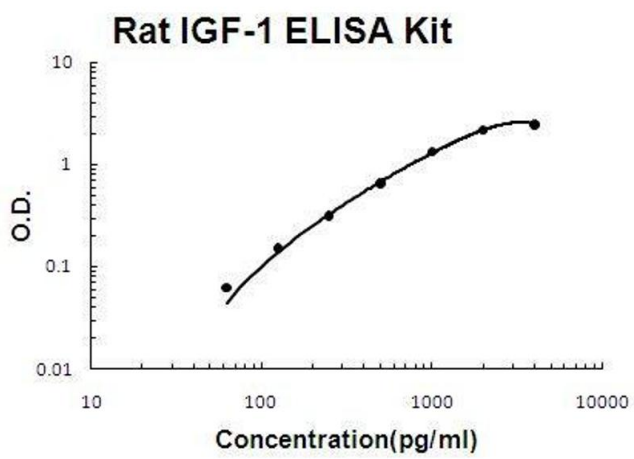
Ozdemir, Aksu, Baykara, Ates, Sisman, Kiray, Buyuk, Uysal: "Effects of administration of subtoxic doses of acetaminophen on liver and blood levels of insulin-like growth factor-1 in rats." in: **Toxicology and industrial health**, Vol. 32, Issue 1, pp. 39-46, (2016) (PubMed).

Cai, Tan, Zhang, Li, Wang, Zhu, Wang, Yang, Wang, Liu, Xu, Pan, Wang, Yang, Lu: "Mesenchymal Stem Cells and Cardiomyocytes Interplay to Prevent Myocardial Hypertrophy." in: **Stem cells translational medicine**, Vol. 4, Issue 12, pp. 1425-35, (2016) (PubMed).

Hou, Wan, Wang, Li, Wang, Yao, Feng, Jing, Lu, Jia, Peng: "Let-7a inhibits migration of melanoma cells via down-regulation of HMGA2 expression." in: **American journal of translational research**, Vol. 8, Issue 9, pp. 3656-3665, (2016) (PubMed).

Niu, Kou, Zhou, Ding: "Heshouwu decoction, a Chinese herb for tonifying kidney, ameliorates hypothalamic-pituitary- testicular axis secretion in aging rats." in: **Neural regeneration research**, Vol. 7, Issue 21, pp. 1611-7, (2015) (PubMed).

There are more publications referencing this product on: Product page



ELISA

Image 1. Rat IGF-1 PicoKine ELISA Kit standard curve