Datasheet for ABIN2859206

# IGF1 ELISA Kit

4 Publications

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## Overview

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

## Product Details

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| Purpose: | For quantitative detection of human IGF-1 in cell culture supernates, serum and plasma(heparin, EDTA). |
| 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<br>Immunogen sequence: G49-A118 |
| Specificity: | Natural and recombinant human IGF-1 |
| Cross-Reactivity (Details): | There is no detectable cross-reactivity with IGF-2. |

## Product Details

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| Sensitivity: | <10pg/mL |
| Components: | • 96-well plate precoated with anti- human IGF-1 antibod - 1<br>• Lyophilized recombinant human IGF-1 standar - 10ng/tubex2<br>• Biotinylated anti- human IGF-1 antibod - 130µl(dilution 1:100)<br>• Avidin-Biotin-Peroxidase Complex (ABC - 130µl(dilution 1:100)<br>• Sample diluent buffe - 30 ml<br>• Antibody diluent buffe - 12ml<br>• ABC diluent buffe - 12ml<br>• TMB color developing agen - 10ml<br>• TMB stop solutio - 10ml |

## Target Details

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| Target: | IGF1 |
| Alternative Name: | IGF1 (IGF1 Products) |
| 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.1 The IGF1 gene, mapped on 12q22-q24. 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. |
| Gene ID: | 3479 |
| UniProt: | P05019 |
| 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, |

## Target Details

Positive Regulation of fat Cell Differentiation

## Application Details

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| Application Notes: | Optimal working dilution should be determined by the investigator. |
| Plate: | Pre-coated |
| Protocol: | human 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-1 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 human 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 human 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 human cell culture supernates, serum or plasma(heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each human IGF-1 standard solution and each sample be measured in duplicate. |
| Assay Precision: | • Sample 1: n=16, Mean(pg/ml): 523, Standard deviation: 21.97, CV(%): 4.2<br>• Sample 2: n=16, Mean(pg/ml): 1345, Standard deviation: 65.91, CV(%): 4.9<br>• Sample 3: n=16, Mean(pg/ml): 2632, Standard deviation: 134.2, CV(%): 5.1,<br>• Sample 1: n=24, Mean(pg/ml): 645, Standard deviation: 37.41, CV(%): 5.8<br>• Sample 2: n=24, Mean(pg/ml): 1631, Standard deviation: 109.3, CV(%): 6.7<br>• Sample 3: n=24, Mean(pg/ml): 3045, Standard deviation: 231.4, CV(%): 7.6 |
| Restrictions: | For Research Use only |

## Handling

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| 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:

Wang, Wang, Liang, Liu, Shi, Bai, Lin, Magaye, Zhao: "Expression and clinical significance of IGF-1, IGFBP-3, and IGFBP-7 in serum and lung cancer tissues from patients with non-small cell lung cancer." in: **OncoTargets and therapy**, Vol. 6, pp. 1437-44, (2013) (PubMed).

Cai, Li, Wang, Liu, Yang, Chen, Yin, Tan, Zhu, Pan, Wang, Lu: "Apoptosis of bone marrow mesenchymal stem cells caused by homocysteine via activating JNK signal." in: **PLoS ONE**, Vol. 8, Issue 5, pp. e63561, (2013) (PubMed).

Ni, Sun, Fu, Wang, Guo, Tian, Wei: "IGF-1 promotes the development and cytotoxic activity of human NK cells." in: **Nature communications**, Vol. 4, pp. 1479, (2013) (PubMed).

Chai, Guo, Wang, Fu, Guan, Tan, Ren, Yang: "Antibacterial effect of 317L stainless steel contained copper in prevention of implant-related infection in vitro and in vivo." in: **Journal of materials science. Materials in medicine**, Vol. 22, Issue 11, pp. 2525-35, (2011) (PubMed).

 