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Rabbit Anti-phospho-IGF1R (Tyr1161)antibody

SL3226R

Product Name	phospho-IGF1R (Tyr1161)
Chinese Name	磷酸化胰岛素样生长因子 1 受体抗体
Alias	IGF1 Receptor (phospho Y1161); p-IGF1 Receptor (phospho Y1161); IGF1R (phospho-Tyr1161); IGF1R (phospho-Y1161); p-IGF1R (Tyr1161); p-IGF1R (Y1161); IGF1R (phospho Tyr1161); Insulin-like growth factor 1 receptor; CD221; CD221 antigen; IGF1 Receptor; IGF 1 receptor; IGF 1R; IGF I receptor; IGFIRC; Insulin like growth factor 1 receptor precursor; JTK13; MGC142170; MGC142172; Insulin-like growth factor 1 receptor beta chain; IGF 1 receptor; IGF-1R; IGF I receptor; IGF-I receptor; IGF-IR; IGF1R_HUMAN.
Product Type	Phosphorylated anti
Research Area	immunology Developmental biology Signal transduction Growth factors and hormones
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human,Mouse,Rat
Applications	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-400,IF=1:100-500,ELISA=1:5000-10000 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	71/80kDa
Cellular localization	The cell membrane
Form	Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthesised phosphopeptide derived from human IGF1R around the phosphorylation site of Tyr1161: DI(p-Y)ET <Cytoplasmic>
Lsotype	IgG

Purification	affinity purified by Protein A
Buffer Solution	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Attention	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
PubMed	PubMed
Product Detail	This receptor binds insulin-like growth factor 1 (IGF1) with a high affinity and IGF2 with a lower affinity. It has a tyrosine-protein kinase activity, which is necessary for the activation of the IGF1-stimulated downstream signaling cascade. When present in a hybrid receptor with INSR, binds IGF1. PubMed:12138094 shows that hybrid receptors composed of IGF1R and INSR isoform Long are activated with a high affinity by IGF1, with low affinity by IGF2 and not significantly activated by insulin, and that hybrid receptors composed of IGF1R and INSR isoform Short are activated by IGF1, IGF2 and insulin. In contrast, PubMed:16831875 shows that hybrid receptors composed of IGF1R and INSR isoform Long and hybrid receptors composed of IGF1R and INSR isoform Short have similar binding characteristics, both bind IGF1 and have a low affinity for insulin. **Function:** Receptor tyrosine kinase which mediates actions of insulin-like growth factor 1 (IGF1). Binds IGF1 with high affinity and IGF2 and insulin (INS) with a lower affinity. The activated IGF1R is involved in cell growth and survival control. IGF1R is crucial for tumor transformation and survival of malignant cell. Ligand binding activates the receptor kinase, leading to receptor autophosphorylation, and tyrosines phosphorylation of multiple substrates, that function as signaling adapter proteins including, the insulin-receptor substrates (IRS1/2), Shc and 14-3-3 proteins. Phosphorylation of IRSs proteins lead to the activation of two main signaling pathways: the PI3K-AKT/PKB pathway and the Ras-MAPK pathway. The result of activating the MAPK pathway is increased cellular proliferation, whereas activating the PI3K pathway inhibits apoptosis and stimulates protein synthesis. Phosphorylated IRS1 can activate the 85 kDa regulatory subunit of PI3K (PIK3R1), leading to activation of several downstream substrates, including protein AKT/PKB. AKT phosphorylation, in turn, enhances protein synthesis through mTOR activation and triggers the antiapoptotic effects of IGFIR through phosphorylation and inactivation of BAD. In parallel to PI3K-driven signaling, recruitment of Grb2/SOS by phosphorylated IRS1 or Shc leads to recruitment of Ras and activation of the ras-MAPK pathway. In addition to these two main signaling pathways IGF1R signals also through the Janus kinase/signal transducer and activator of transcription pathway (JAK/STAT). Phosphorylation of JAK proteins can lead to phosphorylation/activation of signal transducers and activators of transcription (STAT) proteins. In particular activation of STAT3, may be essential for the transforming activity of IGF1R. The JAK/STAT pathway activates gene transcription and may be responsible for the transforming activity. JNK kinases can also be activated by the IGF1R. IGF1 exerts inhibiting activities on JNK activation via phosphorylation and inhibition of MAP3K5/ASK1, which is able to directly associate with the IGF1R.

When present in a hybrid receptor with INSR, binds IGF1. PubMed:12138094 shows that hybrid receptors composed of IGF1R and INSR isoform Long are activated with a high affinity by IGF1, with low affinity by IGF2 and not significantly activated by insulin, and that hybrid receptors composed of IGF1R and INSR isoform Short are activated by IGF1, IGF2 and insulin. In contrast, PubMed:16831875 shows that hybrid receptors composed of IGF1R and INSR isoform Long and hybrid receptors composed of IGF1R and INSR isoform Short have similar binding characteristics, both bind IGF1 and have a low affinity for insulin.

Subunit:
Tetramer of 2 alpha and 2 beta chains linked by disulfide bonds. The alpha chains contribute to the formation of the ligand-binding domain, while the beta chain carries the kinase domain. Interacts with PIK3R1 and with the PTB/PID domains of IRS1 and SHC1 in vitro when autophosphorylated on tyrosine residues. Forms a hybrid receptor with INSR, the hybrid is a tetramer consisting of 1 alpha chain and 1 beta chain of INSR and 1 alpha chain and 1 beta chain of IGF1R. Interacts with ARRB1 and ARRB2. Interacts with GRB10. Interacts with GNB2L1/RACK1. Interacts with SOCS1, SOCS2 and SOCS3. Interacts with 14-3-3 proteins. Interacts with NMD2. Interacts with MAP3K5. Interacts with STAT3.

Subcellular Location:
Membrane; Single-pass type I membrane protein.

Tissue Specificity:
Found as a hybrid receptor with INSR in muscle, heart, kidney, adipose tissue, skeletal muscle, hepatoma, fibroblasts, spleen and placenta (at protein level). Expressed in a variety of tissues. Overexpressed in tumors, including melanomas, cancers of the colon, pancreas prostate and kidney.

Post-translational modifications:
Autophosphorylated on tyrosine residues in response to ligand binding. Autophosphorylation occurs in trans, i.e. one subunit of the dimeric receptor phosphorylates tyrosine residues on the other subunit. Autophosphorylation occurs in a sequential manner; Tyr-1165 is predominantly phosphorylated first, followed by phosphorylation of Tyr-1161 and Tyr-1166. While every single phosphorylation increases kinase activity, all three tyrosine residues in the kinase activation loop (Tyr-1165, Tyr-1161 and Tyr-1166) have to be phosphorylated for optimal activity. Can be autophosphorylated at additional tyrosine residues (in vitro). Autophosphorylated is followed by phosphorylation of juxtamembrane tyrosines and C-terminal serines. Phosphorylation of Tyr-980 is required for IRS1- and SHC1-binding. Dephosphorylated by PTPN1 (By similarity).
Ubiquitinated leading to its degradation by the proteasome.

DISEASE:
DEFects in IGF1R are a cause of insulin-like growth factor 1 resistance (IGF1RES) [MIM:270450]. It is a disorder characterized by intrauterine growth retardation and poor postnatal growth accompanied with increased plasma IGF1.

Similarity:
Belongs to the protein kinase superfamily. Tyr protein kinase family. Insulin receptor subfamily.
Contains 3 fibronectin type-III domains.
Contains 1 protein kinase domain.

SWISS:
P08069

Gene ID:
3480

Database links:

Entrez Gene: 3480 Human

Entrez Gene: 16001 Mouse

Entrez Gene: 25718 Rat

Omim: 147370 Human

SwissProt: P08069 Human

SwissProt: Q60751 Mouse

SwissProt: P24062 Rat

Unigene: 643120 Human

Unigene: 714012 Human

Unigene: 275742 Mouse

Unigene: 10957 Rat