abcam

Product datasheet

Anti-IGF1 Receptor (phospho Y1161) antibody ab39398

18 Abreviews 67 References 4 Images

Overview

Product name	Anti-IGF1 Receptor (phospho Y1161) antibody
Description	Rabbit polyclonal to IGF1 Receptor (phospho Y1161)
Host species	Rabbit
Tested applications	**Suitable for:** IHC-P, WB
Species reactivity	**Reacts with:** Human **Predicted to work with:** Mouse, Rat
Immunogen	Synthetic peptide corresponding to Human IGF1 Receptor (phospho Y1161). Synthetic phospho-peptide derived from human IGF1 receptor around the phosphorylation site of tyrosine 1161 Database link: **P08069**
Positive control	IHC-P: Human breast carcinoma and stomach tissues. WB: HEK-293 treated with insulin cell lysate.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	pH: 7 Preservative: 0.02% Sodium azide Constituents: 50% Glycerol, 0.87% Sodium chloride, PBS Without Mg2+ and Ca2+
Purity	Immunogen affinity purified
Purification notes	ab39398 was affinity purified from rabbit antiserum by affinity chromatography using an epitope specific phosphopeptide. The antibody against non-phosphopeptide was removed by

chromatography using a non-phosphopeptide corresponding to the phosphorylation site.

Clonality Polyclonal

Isotype IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab39398 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	★★★★★ (3)	1/50 - 1/100.
WB	★★★★☆ (5)	1/500 - 1/1000. Predicted molecular weight: 155 kDa.

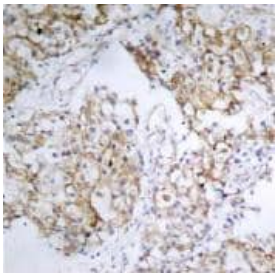
Target

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.

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.

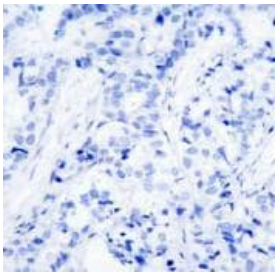
	Overexpressed in tumors, including melanomas, cancers of the colon, pancreas prostate and kidney.
Involvement in disease	Insulin-like growth factor 1 resistance
Sequence similarities	Belongs to the protein kinase superfamily. Tyr protein kinase family. Insulin receptor subfamily. Contains 4 fibronectin type-III domains. Contains 1 protein kinase domain.
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. Phosphorylation of Ser-1278 by GSK-3beta restrains kinase activity and promotes cell surface expression, it requires a priming phosphorylation at Ser-1282. Dephosphorylated by PTPN1. Polyubiquitinated at Lys-1168 and Lys-1171 through both 'Lys-48' and 'Lys-29' linkages, promoting receptor endocytosis and subsequent degradation by the proteasome. Ubiquitination is facilitated by pre-existing phosphorylation. Sumoylated with SUMO1. Controlled by regulated intramembrane proteolysis (RIP). Undergoes metalloprotease-dependent constitutive ectodomain shedding to produce a membrane-anchored 52 kDa C-Terminal fragment which is further processed by presenilin gamma-secretase to yield an intracellular 50 kDa fragment.
Cellular localization	Cell membrane.

Images



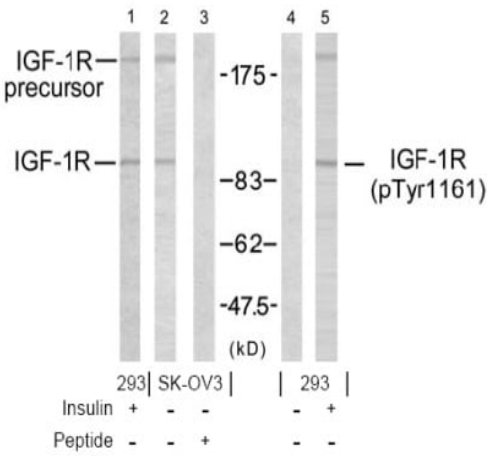
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IGF1 Receptor (phospho Y1161) antibody (ab39398)

Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using ab39398 diluted 1:50.



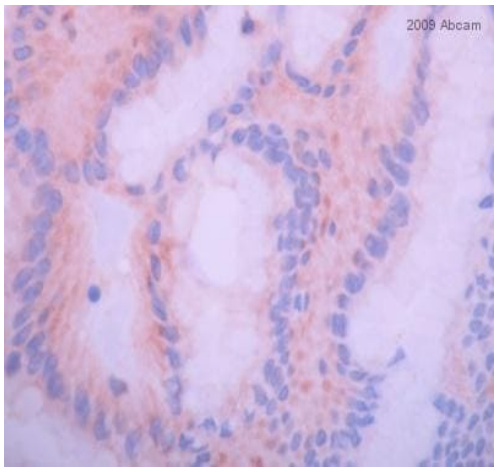
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IGF1 Receptor (phospho Y1161) antibody (ab39398)

Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using ab39398 diluted 1:50 after pre-incubation with the immunogen (synthetic phosphopeptide)



Western blot - Anti-IGF1 Receptor (phospho Y1161) antibody (ab39398)

Western blot analysis using IGF1 Receptor antibody (**ab39675**, Lane 1, 2 and 3) and IGF1 Receptor (phospho-Tyr1161) antibody (ab39398, Lane 4 and 5).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-IGF1 Receptor (phospho Y1161) antibody (ab39398)

This image is courtesy of an anonymous abreview.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human stomach tissue sections labeling IGF1 Receptor (phospho Y1161) with ab39398 at 1/100 dilution. The tissue was fixed with formaldehyde; heat mediated antigen retrieval was performed using a citrate buffer pH 6.0. The tissue was blocked with 5% serum for 1 hour at 23°C followed by incubation with ab39398 at 1/100 for 1 hour at 23°C. An undiluted polyclonal goat anti-rabbit HRP conjugated secondary antibody was used.