ARG44678
anti-IGF1 Receptor antibody

Package: 50 µg
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody recognizes IGF1 Receptor
Tested Reactivity	Hu, Ms
Tested Application	IP, WB
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2a
Target Name	IGF1 Receptor
Species	Human
Conjugation	Un-conjugated
Alternate Names	IGFR; JTK13; IGFIR; Insulin-like growth factor 1 receptor; CD221; CD antigen CD221; Insulin-like growth factor I receptor; IGF-I receptor; EC 2.7.10.1

Application Instructions

Application table

Application	Dilution
IP	10 µg/mL
WB	1 µg/mL

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

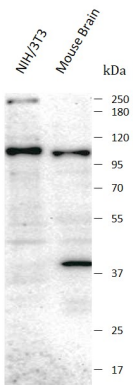
Form	Liquid
Purification	Protein A purification
Buffer	PBS with 0.09% sodium azide
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	IGF1R
Gene Full Name	insulin-like growth factor 1 receptor

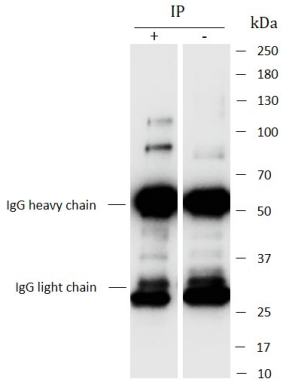
Background	This receptor binds insulin-like growth factor 1 (IGF1) with a high affinity and IGF2 with a lower affinity. It has a tyrosine-protein kinase activity, which is necessary for the activation of the IGF1-stimulated downstream signaling cascade. When present in a hybrid receptor with INSR, binds IGF1.
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. [UniProt]
Highlight	Related Antibody Duos and Panels: ARG30240 Phospho IGF1 Receptor Antibody Duo (Total, pY1161) Related products: IGF1R antibodies; IGF1R ELISA Kits; IGF1R Duos / Panels; Anti-Rabbit IgG secondary antibodies; Related news: Tumor microenvironments are shown to affect progression of several cancer subtypes
Research Area	Cancer antibody; Developmental Biology antibody; Neuroscience antibody; Signaling Transduction antibody
PTM	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 (By similarity). 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.

Images



ARG44678 anti-IGF1 Receptor antibody WB image

Western blot: NIH/3T3 and Mouse Brain stained with ARG44678 anti-IGF1 Receptor antibody at 1 µg/mL dilution.



ARG44678 anti-IGF1 Receptor antibody IP image

Immunoprecipitation: NIH/3T3 lysate immunoprecipitated with 2.5 µg of ARG44678 anti-IGF1 Receptor antibody.