

Rabbit HER4 Polyclonal Antibody | anti-HER4 antibody

Phospho-HER4 (Tyr1242) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA329912	Rabbit	Human, Mouse, Rat Predicted Reactivity: Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%), Chicken (100%), Xenopus (88%)	ELISA, Immunocytochemistry, Immunofluorescence, Western Blot

PRODUCT SYNONYMS

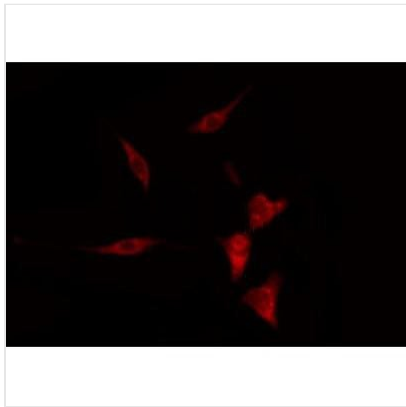
HER4; Polyclonal Antibody; Phospho-HER4 (Tyr1242) Antibody; 4ICD; ALS19; Avian erythroblastic leukemia viral oncogene homolog 4; Avian erythroblastic leukemia viral v erb b2 oncogene homolog 4; E4ICD; EC 2.7.10.1; Erbb4; ERBB4 intracellular domain; ERBB4_HUMAN; HER 4; human epidermal growth factor receptor 4; Mer4; MGC138404; Oncogene ERBB4; p180erbB4; Proto-oncogene-like protein c-ErbB-4; Receptor protein tyrosine kinase erbB 4 precursor; Receptor tyrosine protein kinase erbB 4; s80HER4; Tyrosine kinase type cell surface receptor HER4; Tyrosine kinase-type cell surface receptor HER4; v erb a avian erythroblastic leukemia viral oncogene homolog like 4; v erb a erythroblastic leukemia viral oncogene homolog 4; v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian); V-ERB-B2 avian erythroblastic leukemia viral oncogene homolog 4; Verba avian erythroblastic leukemia viral oncogene homolog like 4; Verba erythroblastic leukemia viral oncogene homolog 4; VERBB2; anti-HER4 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat Predicted Reactivity: Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%), Chicken (100%), Xenopus (88%)
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-HER4 (Tyr1242) Antibody detects endogenous levels of HER4 only when phosphorylated at Tyr1242. Tissue Specificity: Expressed at highest levels in brain, heart, kidney, in addition to skeletal muscle, parathyroid, cerebellum, pituitary, spleen, testis and breast. Lower levels in thymus, lung, salivary gland, and pancreas. Isoform JM-A CYT-1 and isoform JM-B CYT-1 are expressed in cerebellum, but only the isoform JM-B is expressed in the heart.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-HER4 antibody	ELISA (Peptide ELISA), ICC (Immunocytochemistry), IF (Immunofluorescence), WB (Western Blot)
Immunogen	A synthesized peptide derived from human HER4 around the phosphorylation site of Tyr1242.
Conjugation	Unconjugated
Fragment	Fab fragment

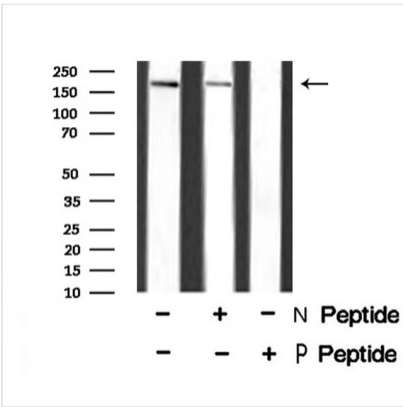
Post Translational Modifications	Isoform JM-A CYT-1 and isoform JM-A CYT-2 are processed by ADAM17. Proteolytic processing in response to ligand or 12-O-tetradecanoylphorbol-13-acetate stimulation results in the production of 120kDa soluble receptor forms and intermediate membrane-anchored 80kDa fragments (m80HER4), which are further processed by a presenilin-dependent gamma-secretase to release a cytoplasmic intracellular domain (E4ICD; E4ICD1/s80Cyt1 or E4ICD2/s80Cyt2, depending on the isoform). Membrane-anchored 80kDa fragments of the processed isoform JM-A CYT-1 are more readily degraded by the proteasome than fragments of isoform JM-A CYT-2, suggesting a prevalence of E4ICD2 over E4ICD1. Isoform JM-B CYT-1 and isoform JM-B CYT-2 lack the ADAM17 cleavage site and are not processed by ADAM17, precluding further processing by gamma-secretase. 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. Ligands trigger phosphorylation at specific tyrosine residues, thereby creating binding sites for scaffold proteins and effectors. Constitutively phosphorylated at a basal level when overexpressed in heterologous systems; ligand binding leads to increased phosphorylation. Phosphorylation at Tyr-1035 is important for interaction with STAT1. Phosphorylation at Tyr-1056 is important for interaction with PIK3R1. Phosphorylation at Tyr-1242 is important for interaction with SHC1. Phosphorylation at Tyr-1188 may also contribute to the interaction with SHC1. Isoform JM-A CYT-2 is constitutively phosphorylated on tyrosine residues in a ligand-independent manner. E4ICD2 but not E4ICD1 is phosphorylated on tyrosine residues. Ubiquitinated. During mitosis, the ERBB4 intracellular domain is ubiquitinated by the APC/C complex and targeted to proteasomal degradation. Isoform JM-A CYT-1 and isoform JM-B CYT-1 are ubiquitinated by WWP1. The ERBB4 intracellular domain (E4ICD1) is ubiquitinated, and this involves NEDD4.
Subunit Structure	Monomer in the absence of bound ligand. Homodimer or heterodimer with another ERBB family member upon ligand binding, thus forming heterotetramers. Interacts with EGFR and ERBB2. Interacts with CBFA2T3 (By similarity). Interacts with DLG2 (via its PDZ domain), DLG3 (via its PDZ domain), DLG4 (via its PDZ domain) and SNTB2 (via its PDZ domain). Interacts with MUC1. Interacts (via its PPxy motifs) with WWOX. Interacts (via the PPxY motif 3 of isoform JM-A CYT-2) with YAP1 (via the WW domain 1 of isoform 1). Interacts (isoform JM-A CYT-1 and isoform JM-B CYT-1) with WWP1. Interacts (via its intracellular domain) with TRIM28. Interacts (via the intracellular domains of both CYT-1 and CYT-2 isoforms) with KAP1; the interaction does not phosphorylate KAP1 but represses ERBB4-mediated transcriptional activity. Interacts with PRPU, DDX23, MATR3, RBM15, ILF3, KAP1, U5S1, U2SURP, ITCH, HNRNPU, AP2A1, NULC, LEO1, WWP2, IGHG1, HXK1, GRB7 AND ARS2. Interacts (phosphorylated isoform JM-A CYT-1 and isoform JM-B CYT-1) with PIK3R1. Interacts with SHC1. Interacts with GRB2. Interacts (soluble intracellular domain) with STAT5A. Interacts (soluble intracellular domain) with BCL2. Interacts (phosphorylated) with STAT1.
Similarity	Belongs to the protein kinase superfamily. Tyr protein kinase family. EGF receptor subfamily.
Subcellular Location	Cell membrane>Single-pass type I membrane protein. Note: In response to NRG1 treatment, the activated receptor is internalized. Nucleus. Mitochondrion. Note: Following proteolytical processing E4ICD (E4ICD1 or E4ICD2 generated from the respective isoforms) is translocated to the nucleus. Significantly more E4ICD2 than E4ICD1 is found in the nucleus. E4ICD2 colocalizes with YAP1 in the nucleus.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



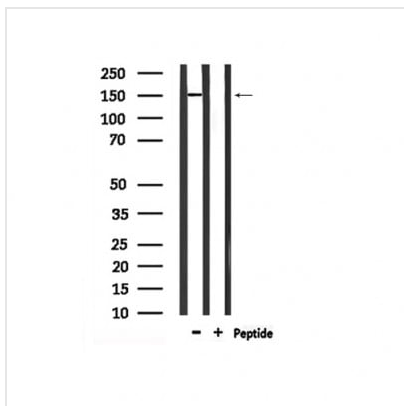
Application Data

At 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.



WB (Western Blot)

Western blot analysis of HER4 (Phospho-Tyr1242) using Insulin treated 293 whole cell lysates. -/+ means absence or presence of N peptide; -/+ non-phospho peptide) and P peptide(phospho peptide).



WB (Western Blot)
 Western blot analysis of extracts from HepG2, using HER4 (Phospho-Tyr1242) Antibody.

ADDITIONAL INFORMATION

Related Product Information for anti-HER4 antibody	Tyrosine-protein kinase that plays an essential role as cell surface receptor for neuregulins and EGF family members and regulates development of the heart, the central nervous system and the mammary gland, gene transcription, cell proliferation, differentiation, migration and apoptosis. Required for normal cardiac muscle differentiation during embryonic development, and for postnatal cardiomyocyte proliferation. Required for normal development of the embryonic central nervous system, especially for normal neural crest cell migration and normal axon guidance. Required for mammary gland differentiation, induction of milk proteins and lactation. Acts as cell-surface receptor for the neuregulins NRG1, NRG2, NRG3 and NRG4 and the EGF family members BTC, EREG and HBEGF. Ligand binding triggers receptor dimerization and autophosphorylation at specific tyrosine residues that then serve as binding sites for scaffold proteins and effectors. Ligand specificity and signaling is modulated by alternative splicing, proteolytic processing, and by the formation of heterodimers with other ERBB family members, thereby creating multiple combinations of intracellular phosphotyrosines that trigger ligand- and context-specific cellular responses. Mediates phosphorylation of SHC1 and activation of the MAP kinases MAPK1/ERK2 and MAPK3/ERK1. Isoform JM-A CYT-1 and isoform JM-B CYT-1 phosphorylate PIK3R1, leading to the activation of phosphatidylinositol 3-kinase and AKT1 and protect cells against apoptosis. Isoform JM-A CYT-1 and isoform JM-B CYT-1 mediate reorganization of the actin cytoskeleton and promote cell migration in response to NRG1. Isoform JM-A CYT-2 and isoform JM-B CYT-2 lack the phosphotyrosine that mediates interaction with PIK3R1, and hence do not phosphorylate PIK3R1, do not protect cells against apoptosis, and do not promote reorganization of the actin cytoskeleton and cell migration. Proteolytic processing of isoform JM-A CYT-1 and isoform JM-A CYT-2 gives rise to the corresponding soluble intracellular domains (4ICD) that translocate to the nucleus, promote nuclear import of STAT5A, activation of STAT5A, mammary epithelium differentiation, cell proliferation and activation of gene expression. The ERBB4 soluble intracellular domains (4ICD) colocalize with STAT5A at the CSN2 promoter to regulate transcription of milk proteins during lactation. The ERBB4 soluble intracellular domains can also translocate to mitochondria and promote apoptosis.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	110825958
NCBI GeneID	2066
NCBI Accession #	NP_001036064.1
NCBI GenBank Nucleotide #	NM_001042599.1
UniProt Accession #	Q15303; Q2M1W1; Q59EW4; B7ZLD7; B7ZLE2; B7ZLE3
Molecular Weight	146,808 Da
NCBI Official Full Name	receptor tyrosine-protein kinase erbB-4 isoform JM-a/CVT-2
NCBI Official Synonym Full Names	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)
NCBI Official Symbol	ERBB4
NCBI Official Synonym Symbols	HER4; p180erbB4

NCBI Protein Information	receptor tyrosine-protein kinase erbB-4; proto-oncogene-like protein c-ErbB-4; tyrosine kinase-type cell surface receptor HER4; avian erythroblastic leukemia viral (v-erb-b2) oncogene homolog 4
UniProt Protein Name	Receptor tyrosine-protein kinase erbB-4
UniProt Gene Name	ERBB4
UniProt Synonym Gene Names	HER4; 4ICD; E4ICD
UniProt Entry Name	ERBB4_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com
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