HER4 Protein, Human (HEK293, His-Avi)

Cat. No.:	HY-P78454
Synonyms:	p180erbB4; 4ICD; E4ICD; HER4; ErbB4; MGC138404; ALS19
Species:	Human
Source:	HEK293
Accession:	Q15303 (Q26-P651)
Gene ID:	2066
Molecular Weight:	80-110 kDa

PROPERTIES

Biological Activity	Immobilized Human Her4 at 1μg/ml (100μl/well) on the plate. Dose response curve for Human NRG1 Beta 1, hFc Tag with the EC_{50} of 34.7ng/ml determined by ELISA.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4. Normally 8% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	HER4, a tyrosine-protein kinase, serves as a pivotal cell surface receptor for neuregulins and EGF family members, playing indispensable roles in the development of the heart, central nervous system, and mammary gland, as well as in gene transcription, cell proliferation, differentiation, migration, and apoptosis. It is essential for normal cardiac muscle differentiation during embryonic development and postnatal cardiomyocyte proliferation. Moreover, HER4 is required for the proper development of the embryonic central nervous system, particularly neural crest cell migration and axon guidance, as well as for mammary gland differentiation and lactation induction. Acting as a receptor for neuregulins NRG1, NRG2, NRG3, NRG4, and EGF family members BTC, EREG, and HBEGF, ligand binding triggers receptor dimerization and autophosphorylation, creating multiple combinations of intracellular phosphotyrosines that elicit ligand- and context-specific cellular responses. HER4 mediates phosphorylation of SHC1 and activates the MAP kinases MAPK1/ERK2 and MAPK3/ERK1. Isoforms JM-A CYT-1 and JM-B CYT-1 phosphorylate PIK3R1, activating phosphatidylinositol 3-kinase and AKT1 to protect against apoptosis and promote cell migration in response to NRG1. Isoforms JM-A CYT-2 and JM-B CYT-2 lack the phosphotyrosine necessary for PIK3R1 interaction, thus foregoing these effects. Proteolytic processing of isoforms

JM-A CYT-1 and JM-A CYT-2 yields soluble intracellular domains (4ICD) that translocate to the nucleus, promoting nuclear import of STAT5A, mammary epithelium differentiation, cell proliferation, and gene expression activation. Additionally, ERBB4 soluble intracellular domains can translocate to mitochondria, inducing apoptosis.

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