ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Her-2/neu(erbB-2) protein

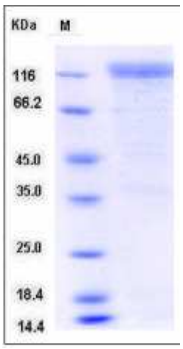
Cat #HER26-R-10 Recombinant (HEK) mouse Her2/Erbb2/Neu (1-653)-hIgG1-Fc fusion protein **Size: 10 ug**

HER2/neu (also known as ErbB-2, ERBB2) is a protein (protein accession # P04626; 1255 aa, ~185 kda, chromosome 17q21.1) highly expressed in breast cancers. It is a cell membrane surface-bound receptor tyrosine kinase and is normally involved in the signal transduction pathways leading to cell growth and differentiation. The oncogene neu is so-named because it was derived from a neuroglioblastoma cell line in rat. ErbB2 was named for its similarity to ErbB (avian erythroblastosis oncogene B). Herstatin, as the product of alternative HER-2 transcript, retains intron 8. The herstatin mRNA is expressed in normal human fetal kidney and liver, but is at reduced levels relative to p185HER-2 mRNA in carcinoma cells that contain an amplified HER-2 gene. Herstatin appears to be an inhibitor of p185HER-2, because it disrupts dimers, reduces tyrosine phosphorylation of p185, and inhibits the anchorage-independent growth of transformed cells that over express HER-2.

ERBB2 over expression confers resistance to taxol-induced apoptosis by inhibiting p34 (CDC2) activation. One mechanism is via ERBB2-mediated up regulation of p21 (CIP1), or CDKN1A, which inhibits CDC2. Over expression also occurs in other cancer such as ovarian cancer and stomach cancer. Clinically, HER2/neu is important as the target of the monoclonal antibody trastuzumab (marketed as Herceptin). Trastuzumab is only effective in breast cancer where the HER2/neu receptor is over expressed. One of the mechanisms of how traztuzumab works after it binds to HER2 is by increasing p27, a protein that halts cell proliferation. Another monoclonal antibody, pertuzumab, which inhibits dimerization of HER2 and HER3 receptors, is in advanced clinical trials.

Human Her2 protein has an extra cellular domain (1-652 a.a), a transmembrane domain (653-675 a.a) and an intracellular domain (676 – 1255 a.a).

Sources of antigen and antibodies



Mouse Erbb2.neu (1-653 a.a, protein accession # P70424) was fused with the Fc region of human IgG1 at the C-terminus and expressed in HEK cells and purified (>90%). Recombinant Erbb2 protein (#HER26-R-10) is 120-130 kDa under reducing conditions. It is supplied in PBS, ph 7.4, and 5-8% Trehalose in liquid or lyophilized in the same buffer. Reconstitute powder in PBS and store at -20oC in suitable size aliquots. It is desirable to add 0.1% BSA or HAS as protein carrier if it doesn't interfere with the assay for stability purpose.

Endotoxin: <1 EU/ug of protein by LAL method.

Bio-activity:
1. Measured by its ability to bind human MUC-1 in a functional ELISA.
2. Measured by its ability to bind human CTNNB1 in a functional ELISA

Storage

Short-term: Liquid, unopened, undiluted vials for less than a week at 4oC and powder up to several months at 4oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.

Shipping: 4oC for solutions and room temp for lyophilized items.

Recommended Usage

Western blot: The secreted recombinant mouse ERBB2/Fc is a disulfide-linked homodimer. The reduced monomer comprises 872 amino acids and has a calculated molecular mass of 96.7kDa. As a result of glycosylation, the apparent molecular mass of the recombinant protein is approximately 120-130kDa in SDS-PAGE under reducing conditions.
ELISA for coating at 1-10 ug/ml.

General References: (1) Yamamoto T (1986) Nature 319, 230-234; Semba K (1985) PNAS 82, 6497-6501; Akiyama T (1986) Science 232, 1644-1646; Bargmann CI (1986) Nature 319, 226- 230; Coussens L (1985) Science 230, 1132-1139; Doherty JK (1999) PNAS 96, 10689-10874

This product is for In vitro research use only.

Related Items

Catalog#	prod Description
HER21-C	Recombinant human Her-2/neu(erbB-2)-Fc protein control for WB
HER21-M	Mouse Monoclonal anti-human Her-2/neu(erbB-2) protein IgG, aff pure
HER21-R-10	Recombinant (HEK) human Her2/Erbb2/Neu (1-652)-hIgG-Fc fusion protein
HER22-R-5	Recombinant (sf9) human Her2/Erbb2/Neu (676-1255)-GST fusion protein
HER23-R-10	Recombinant (HEK) human Her2/Erbb2/Neu (23-652)-his tag fusion protein
HER24-R-10	Recombinant (HEK) mouse Her2/Erbb2/Neu (23-653)-his tag fusion protein
HER2-563-P	HER2 peptide, cyclic, (563-598, cys-cys disulphide bond); vaccine candidate
HER2-585-P	HER2 peptide, cyclic, (585-598, cys-cys disulphide bond); vaccine candidate
HER2-597-P	HER2 peptide, cyclic, (597-626, cys-cys disulphide bond) vaccine candidate
HER25-R-100	Recombinant (E. Coli) Her-2/neu(erbB-2) Herstatin protein, purified
HER25-R-20	Recombinant (E. Coli) Her-2/neu(erbB-2) herstatin protein, purified
HER2-613-P	HER2 peptide, cyclic, (613-626, cys-cys disulphide bond); vaccine candidate
HER2-654-P	HER2 peptide, (654 – 662), GP2 vaccine candidate
HER26-R-10	Recombinant (HEK) mouse Her2/Erbb2/Neu (1-653)-hIgG1-Fc fusion protein
HER2-776-P	HER2 peptide, (776 – 790 fused with LRMK, C-Term), GP2 vaccine candidate
HER27-R-10	Recombinant (HEK) rat Her2/Erbb2/Neu (4-656)-his tag fusion protein
HER28-R-10	Recombinant (HEK) rat Her2/Erbb2/Neu (4-656)-hIgG1-Fc fusion protein
HER29-R-10	Recombinant (HEK) monkey/rhesus Her2/Erbb2/Neu (1-652)-his tag fusion protein
HER33-M	Mouse mono anti-monkey/rhesus Her2/Erbb2/Neu (1-652) protein IgG
HER34-A	Anti-monkey/rhesus Her2/Erbb2/Neu (1-652) protein IgG
HER35-M	Humanized anti-human Her2/Erbb2/Neu protein IgG (Herceptin Biosimilar)

HER26-R-10 **131112P**

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