

## HER2/ERBB2 Protein, Human, Recombinant (aa 1-652, His)

## General Information

Synonyms:	erb-b2 receptor tyrosine kinase 2;NEU;ENVW;HERV-7q;HERV7Q;HER-2/neu;MLN 19;ENV;TKR1;EGFR2;HERV-W-ENV;MLN19;HERVWENV;ERVWE1;HER-2;CD340;NGL;HER2;HERVW
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Thr 652) of human ErbB2 (NP_004439.2) was fused with the polyhistidine tag at the C-terminus. Predicted N terminal: Thr 23
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P04626-1
Molecular Weight:	71 kDa (predicted); 100-110 kDa (reducing condition, due to glycosylation)

## QC Testing

Biological Activity:	<ol style="list-style-type: none"><li>1. Immobilized Her2/ERBB2 Protein, Human, Recombinant (ECD, His Tag) at 2 µg/ml (100 µl/well) can bind Anti-ErbB2 Antibody (Trastuzumab), the EC50 is 10-60 ng/mL.</li><li>2. Measured by its ability to block anti-ErbB2 mediated inhibition of BT474 human breast ductal carcinoma cell proliferation. The ED50 for this effect is 0.2-1 µg/mL in the presence of 0.6 µg/mL Anti-ErbB2/Her2 Monoclonal Antibody.</li><li>3. Using the Octet RED System, the affinity constant (Kd) of Her2 / ERBB2 Protein, Human, Recombinant (His Tag) bound to Pertuzumab was 0.1 nM.</li><li>4. Captured anti-Her2 IgG1 antibody on proA Chip can bind Her2 with an affinity constant of 3.270 nM as determined in a SPR assay (Routinely tested).</li><li>5. Captured Trastuzumab on proA Chip can bind Her2 with an affinity constant of 3.727 nM as determined in a SPR assay (Routinely tested).</li></ol>
Purity:	> 90 % as determined by SDS-PAGE. > 90 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

## Preparation and Storage

## Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

## Stability &amp; Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Human epidermal growth factor receptor 2 (HER2), also known as ErbB2, NEU, and CD340, is a type I membrane glycoprotein and belongs to the epidermal growth factor (EGF) receptor family. HER2 protein cannot bind growth factors due to the lacking of ligand binding domain of its own and autoinhibited constitutively. However, HER2 forms a heterodimer with other ligand-bound EGF receptor family members, therefore stabilizes ligand binding and enhances kinase-mediated activation of downstream molecules. HER2 plays a key role in development, cell proliferation and differentiation. HER2 gene has been reported to associate with malignancy and a poor prognosis in numerous carcinomas, including breast, prostate, ovarian, lung cancers and so on. Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

### Reference

Krawczyk N, et al. (2009) HER2 status on persistent disseminated tumor cells after adjuvant therapy may differ from initial HER2 status on primary tumor. *Anticancer Res.* 29(10): 4019-24.

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